COMP280.2

This lecture is an introduction to cybersecurity and will focus on the history of networking and computing that has led to the need for organisations and individuals to secure their digital data and the approaches that individuals, organisations and governments will employ to gain access to your data and devices.

**Learning Objectives:**

* **Understand** how developments in social, technical and economic spheres created an environment for cybersecurity
* **Define**  the term ‘cybersecurity’
* **Identify** common hacking and phishing approaches

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture – History and state of Cybersecurity |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0015 | Introduction to worksheet I |
| 0015-0145 | Group research and wiki development activity |
| 0145-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP280.3

This session is an introduction to the http server framework that is a core part of the WWW and will explore the transport protocol (the tp of http) using Python to create lightweight clients and servers. We will use JSON as a packet protocol and sqlite to manage persistent data on the server.

**Learning Objectives:**

* **Understand** how the http server framework is implemented in Python
* **Develop** suitable JSON packets to transmit data between client & server and server & client application
* **Create** simple relational databases using sqlite
* **Program** queries in sql to CRUD (create, retrieve, update and delete) data in a sqlite database

**Agenda (lecture-shop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0030 | Demo – creating http client servers in Python |
| 0030-0100 | Workshop – working with JSON |
| 0100-0150 | Workshop -working with sqlite ptI  Sqlite functional testbed |
| 0150-0210 | Break |
| 0210-0245 | Workshop -working with sqlite ptII  Sqlite server backend |
| 0245-0300 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP280.4

This session is will develop your http server applications from the previous week by migrating client functionality into Unreal Engine and C++

**Learning Objectives:**

* **Configure** Unreal Engine to support HTTP
* **Integrate** JSON functionality into Unreal Engine
* **Develop** a simple Unreal Engine application to show GET & POST functionality
* **Extend** your Unreal Engine testbed for a real application

**Agenda (lecture-shop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0030 | Demo – integrating HTTP into Unreal Engine |
| 0030-0100 | Workshop – working with JSON in C++ |
| 0100-0150 | Workshop -Building an Unreal Engine HTTP testbed |
| 0150-0210 | Break |
| 0210-0245 | Workshop -Building an Unreal Engine HTTP testbed (cont.) |
| 0245-0300 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.1

This is the introductory session for the module and will concentrate on module assessment, the week by week sequence of lectures & workshops and will conclude with and introduction into MUD (multi-user dungeons).

**Learning Objectives:**

* **Recall** assignment plans
* **List** lecture times, locations and titles

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture |
| 0055-0100 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.2

This session will examine the fundamental architecture of the internet through the internet protocol (IP) and the transmission control protocol (TCP). We will look at creating client server applications using Berkley sockets in Python.

**Learning Objectives:**

* **State** the core features of the IP protocol
* **Explain** the differences between TCP and datagram protocols
* **Determine** appropriate use cases for each protocol
* **Develop** socket-based applications to implement server and client protocols

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on TCP theory |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Guided worksheet to develop socket-based proof-of-concept applications to demonstrate server and client roles in data communications |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.3

This session will extend our Python programming create server applications that can support multiple clients through the use of threads to create and maintain multiple socket contexts. This approach will also be used in client applications to create responsive interaction. To create more attractive Python clients, we will use PyQt. Finally, we will use exception handling to manage the client-server use-cases of loss of client and server from server and client perspectives respectively.

**Learning Objectives:**

* **Architect** simple applications that use threading to manage blocking code paths
* **Write** simple applications that handle lost socket exceptions graceful to manage connectivity states
* **Design** and **implement** user interfaces using PyQt

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on exceptions & threads |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0045 | Workshop on using exceptions and threads |
| 0050-0155 | Workshop on PyQt |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.4

In this session, we will develop a chat service using the techniques of exception handling, threading and PyQt from the previous session. The chat service provides a client-server framework that can be used to develop many multi-client services.

The workshop will develop extra functionality for the chat service across the client and server.

**Learning Objectives:**

* **Architect** a complex and robust service from UML into Python
* **Show** how Python design patterns can be used to create complex client-server applications
* **Implement** novel features for the chat service across both client and server applications

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on Chat Service development |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Workshop on chat service development |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.5

In this session, we will look at network security from the perspective of network-enabled application developers

**Learning Objectives:**

* **Recall** the threats and issues of network-enabled applications
* **Highlight** the issues concerning weak passwords and very-high performance reverse hashing algorithms

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on network security |
| 0055-0100 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.9

This session will introduce the twin concepts of users and user security, using SQL databases to manage users and their application data as well as security related data

The workshop will explore adding user security to a MUD

**Learning Objectives:**

* **Explain** the need for user security in online services
* **Implement** an approach foruser-based in a simple application

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on user theory in client/server applications |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Workshop to implement a multi-user client/server with secure user accounts |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.10

This session will introduce the concept of packet encryption to provide a secure communications channel between client & server applications that is resilient to man-in-the-middle and packet-replay type attacks

The workshop will explore adding packet security to a MUD

**Learning Objectives:**

* **Explain** the need for packet security in online services
* **Compare** different approaches to packet-based security
* **Implement** an approach forpacket-based security in a simple application

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on packet encryption and security in client/server applications |
| 0055-0100 | Departure |

**Agenda (workshop):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Workshop to implement secure packet formats |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

COMP260.11

This session will introduce the concept cryptograph to client/server services and will compare and contrast several different approaches to securing data

The workshop will provide support for your assignments

**Learning Objectives:**

* **Explain** the need for cryptographic security in online services
* **Compare** different approaches to cryptography

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture on cryptography |
| 0055-0100 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.1

This is the introductory session for the module and will concentrate on module assessment, the week by week sequence of lectures & workshops and will discuss how the course has changed in response to student feedback from the 2018/19 presentation.

**Learning Objectives:**

* **Recall** assignment plans
* **List** lecture times, locations and titles

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture |
| 0055-0100 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.2

In this session, we will examine the routes that are available to you as graduates with creative degrees. We will look to find a relationship between what you enjoy doing, what you’d like to do as a job and a career and what skills you need to develop and build to make a successful transition from academic to professional life.

We will also look at career routes that fall outside of traditional game development and routes that lead to follow-on or different academic and professional studies

**Learning Objectives:**

* **Reflect** on what you enjoy, what you are good at, what you feel you should do and where you may fit in society
* **Undertake** appropriate psychological profiling questionnaires to better understand your needs and drives
* **Research** the job market for roles that interest you and look for gaps between your current skillset and what is required for professional roles
* **Research** suitable academic directions to take as a postgraduate

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.3

In this session, we examine creative portfolios, both as guidance for assignment 1, but, moreover, to create a meaningful professional profile that can be used to showcase and signpost your professional work.

We will look at the generic qualities of good profiles and the specific needs for portfolios in different creative areas (animation, art, audio, design, programming and writing) as well as hybrid areas (technical art, technical design, production etc)

**Learning Objectives:**

* **Define** the key attributes for a successful portfolio for your chosen route(s)
* **Create** rough outlines to describe the look, feel and content of your desired portfolio

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.4

In this session, we build on the lectures of the previous weeks to look at how you can build the skills you want to showcase in your portfolio. For each route and creative areas there are similar skills that can be honed as well as skills that are specific to a route and directions within those routes.

We will multiple sources of information to search for key cues to determine what skills are required for roles and then examine to see how those skills can be developed and presented within portfolio and promotional materials

**Learning Objectives:**

* **Analyse** media to discover cues about required, desired and nice to have skills
* **Investigate** on-line and off-line approaches and techniques to develop your skills
* **Discuss** methods of highlighting your skills within portfolio and promotional materials

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.5

In this session we look to move away from traditional face-to-face networking that is the home of professional salespeople and look to build meaningful social networks of people and organisations that can provide co-support and nurturing opportunities.

We will look at quality vs. quantity of social networks, key networks for creative graduates and specific networks for particular routes and professional interests.

**Learning Objectives:**

* **Develop** strategies for building small yet meaningful networks of supports
* **Assess** social networks, and those within networks, for their ability and likelihood to support you in a professional manner
* **Avoid** toxic environments

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.7

In this session we look at how the recruitment process works from the eyes of recruiters and people responsible for hiring into development teams. We will investigate the different types of assessment methods that companies will use for various creative disciplines and the general overlaps between them.

**Learning Objectives:**

* **Analyse** job adverts to determine what a company is really looking for in its recruitment communications
* **Assess** job adverts to determine if a role and/or company is right for you
* **Consider**  how you can adapt your marketing and promotional materials to make yourself a stronger fit for the companies and roles that you want

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.8

This session bookends the previous session, in that by seeing how an organisation looks to recruit, we can create promotional materials, in particular resumes that will delight recruiters leading to requests to interviews.

We will look at different approaches to resumes and their pros and cons. Differences between resumes for different types of role across different disciplines and different types of companies.

We will look at effectively selling yourself and making the most of your previous experiences.

**Learning Objectives:**

* **Create** effective resumes
* **Analyse and assess** the needs of different roles to tailor resumes to required aspects, by industry, by role and by job.

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM340.9

This session takes a fundamentally different approach to the previous session by looking at working for yourself rather than working as an employee. We will look at the broad approaches of freelancing and entrepreneurship.

We will look at the pros and cons of PAYE, sole trader and limited companies and approaches to work that each one of those roles may open you to.

Finally, we will consider entrepreneurship training schemes such as Launchpad.

**Learning Objectives:**

* **Describe** the differences between employee, employer and director roles
* **Assess** the pros and cons of different models of work
* **Determine** which models could work for you, given your earlier interests, goals and ambitions (week 2)

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0155 | Lecture  (with coffee break) |
| 0155-0200 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM320.1

This is the introductory session for the module and will concentrate on module assessment, the week by week sequence of lectures and will discuss how the course has changed in response to student feedback from the 2018/19 presentation.

The session will introduce the Agile Bible as a framework for group working

**Learning Objectives:**

* **Recall** assignment plans
* **List** lecture times, locations and titles

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture |
| 0055-0100 | Departure |

**Further Learning:**

* Self-directed research

**Resources:**

GAM320.x

This is a guest lecture presented by a member of the Games Academy on a subject of their choosing. It will provide some insight and interest and should be of benefit for your studies both within GAM320 and further afield.

**Learning Objectives:**

* Dependent on lecture content

**Agenda (lecture):**

|  |  |
| --- | --- |
| 0000-0005 | Arrival |
| 0005-0055 | Lecture |
| 0055-0100 | Departure |

**Further Learning:**

* Dependent on lecture content
* Self-directed research

**Resources:**

* Dependent on lecture content