

Course Outline 2017
INFOSYS 280: BUSINESS SYSTEMS CONSTRUCTION (15 POINTS)
Semester 2 (1175)

Course Prescription

Design and Code are the DNA of Innovation. As the world becomes more and more digital, enterprises need to apply design thinking and exponential technologies through coding to drive innovation and sustainable transformation. Explores user-centred, prototype-driven design thinking principles and processes: empathize, define, ideate, prototype and test. Introduces fundamental building blocks of programming and applies them to develop innovative products, services and processes that change the world.

Programme and Course Advice

Prerequisite: INFOSYS 110 or 120 or COMPSCI 101 or 107

Goals of the Course

The goals of the course are to enable students to:

- Design, code, innovate** and **sustainably transform** enterprises through exponential technologies.
- Empathize**, observe and engage with users/people/society in an effort to achieve [sustainable development goals](#).
- Define** a problem statement and vision that helps address one of the challenges facing us (Hint: Think global, act local).
- Ideate** and create a product, service or process that solves the problem.
- Prototype** software artefacts that support the product and/or service.
- Test** and **innovate**, through iterative agile development techniques, the creation of a Minimum Viable Product (MVP).

We want to educate, inspire, and empower tomorrow's leaders to adopt design thinking strategy to create and innovate solutions that solve humanity's grand challenges and opportunities.

Learning Outcomes

By the end of this course it is expected that the student will be able to:

- Drive innovation** and **sustainable transformation** in enterprises through the application of **design thinking processes** and **coding of exponential technologies**.
- Empathize**, observe and engage with users/people/society in an effort to achieve [sustainable development goals](#).
- Define** a problem statement and vision that helps address one of the many challenges facing us. Think global, act local.
- Ideate** and create a product or service that solves the problem.
- Create/identify **key processes** to create the product or deliver the service.
- Create and model the **workflow** of the key process and identify its transactions, routes, roles, rules and key performance indicators.
- Create **storyboards** of the *inspiration to innovation, vision to action, and event to decision* processes.

8. **Design** and **implement prototype software artefacts** (frontend, backend and apps) that leverage exponential technologies to achieve sustainable development goals.
9. Develop **analytical dashboards** to monitor, benchmark and manage vital processes by leveraging 3rd party APIs and tools.
10. **Test** and **innovate** through iterative agile development techniques such as XP, Scrum, DevOps and Design Thinking.

Content Outline

Week	Lecture 1	Lecture 2	Lecture 3
1	Introduction. Drive innovation and sustainable transformation in enterprises through the application of design thinking processes and coding of exponential technologies .	Empathize , observe and engage with users/people/society in an effort to achieve <u>sustainable development goals</u> .	Define a problem statement and vision that helps address one of the many challenges facing us. Think global, act local.
2	Ideate and create a product or service that solves the problem.	Create/identify key processes to create the product or deliver the service.	Create and model the workflow of the key process and identify its transactions, routes, roles, rules and key performance indicators.
3	Create storyboards of the <i>inspiration to innovation, vision to action, and event to decision</i> processes.	Design and implement frontend .	Design and implement frontend .
4	Design and implement backend .	Design and implement backend .	Design and implement database driven backend .
5	Design and implement database driven backend .	Design and implement apps .	Develop analytical dashboards to monitor, benchmark and manage vital processes.
6	Develop analytical dashboards to monitor, benchmark and manage vital processes.	Test and innovate through iterative agile development techniques such as XP, Scrum, DevOps and Design Thinking.	Test and innovate through iterative agile development techniques such as XP, Scrum, DevOps and Design Thinking.
7 - 9	Design, Code and Innovate demonstrations and walkthrough: Simple Case Study (Bring Your Own Device Session)		
10 - 12	Design, Code and Innovate demonstrations and walkthroughs: Advanced Case Study (Bring Your Own Device Session)		

Week	Tutorial Outline
1	No Labs
2	D1. Empathize and observe to identify a problem that is facing the world. D2. Define a Vision Statement for your company. D3. Identify or create a product, service or process that address the identified problem. D4. Identify and justify the strategy you will adopt. D5. Identify and justify a vital process to create the product or deliver the service. D6. Identify key performance indicators that will help you to monitor how well the process is being executed. Introduce Development Environment and Tools
3	D7. Model the workflow of the process . Identify the transactions, routes, roles and rules. D8. Design two forms that support two interrelated transactions using story boarding . D9. Implement the static forms that support the two transactions.
4	D9. Implement the static forms that support the two transactions.
5	D10. Design the necessary tables to store the data from these two transactions. D11. Implement the above tables in the database .
6	D12. Develop dynamic forms by transforming the static forms to create and update transactions into the database.
7	D13. Create an automated workflow between the two transactions.
8	D14. Develop dynamic forms that retrieves transactions from the database.
9	D15. Create various transactions to demonstrate and test the workflow. D16. Build an analytical dashboard for the CEO to monitor, benchmark and manage the vital process against the KPIs .
10-12	Assignment Help

Learning and Teaching

We provide a rich and robust learning environment that blends lectures, tutorials, self-learning, discussion forums, assignments, and an exam.

Lectures: 3x1-hour lectures per week
 Tutorials: 1x2-hour tutorial
 Final Exam: Written Exam
 Self-Study: Interactive online tutorials

Tentative Learning Resources

Design & Innovate

[An Introduction to Design Thinking Process Guide](#)
[D.school Bootcamp Bootleg](#)

Code

[HTML & CSS: Design and Build Websites](#)
[JavaScript and JQuery: Interactive Front-End Web Development](#)
[Beginning ASP.NET 4.5 in C#](#)

Self Learning

[Code Avengers](#) OR [Codecademy](#)

Assessment

Assessment	Course Component	Weight
1	Self Learning	5%
2	Tutorials – artefacts developed will be assessed	10%
3a	Assignment 1 – Design	7%
3b	Assignment 2 – Code	10%
3c	Assignment 3 – Innovate	18%
4	Exam	50%

Learning Outcome	Labs	Self Learning	Assignment			Final Exam
			Design	Code	Innovate	
1 – Innovate	X	X	X	X	X	X
2 – Empathize	X		X			X
3 – Define	X		X			X
4 – Ideate	X		X			X
5 – Processes	X		X			X
6 – Workflow	X		X	X	X	X
7 – Storyboard	X	X		X	X	X
8 – Prototype	X	X		X	X	X
9 – Analytics	X	X			X	X
10 – Test	X				X	X

Inclusive Learning

Students are urged to discuss privately any impairment-related requirements face-to-face and/or in written form with the course convenor/lecturer and/or tutor.

Student Feedback

Student feedback is important to us and has been used to improve the course from semester to semester. This semester you may be asked to complete evaluations on the teaching of the course, both in lectures and in tutorials. Please note that you do not have to wait until these evaluations are conducted in order to provide feedback. If there is something that you think we could improve then please let us know (via email or in person) as soon as possible.

Academic Integrity

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student's own work, reflecting his or her learning. Where work from other sources is used, it must be properly acknowledged and referenced. This requirement also applies to sources on the world-wide web. A student's assessed work may be reviewed against electronic source material using computerised detection mechanisms. Upon reasonable request, students may be required to provide an electronic version of their work for computerised review.

In the event of an unexpected disruption

We undertake to maintain the continuity and standard of teaching and learning in all your courses throughout the year. If there are unexpected disruptions the University has contingency plans to ensure that access to your course continues and your assessment is fair, and not compromised. Some adjustments may need to be made in emergencies. In the event of a disruption, the University and your course coordinators will make every effort to provide you with up-to-date information via Canvas and the university web site.