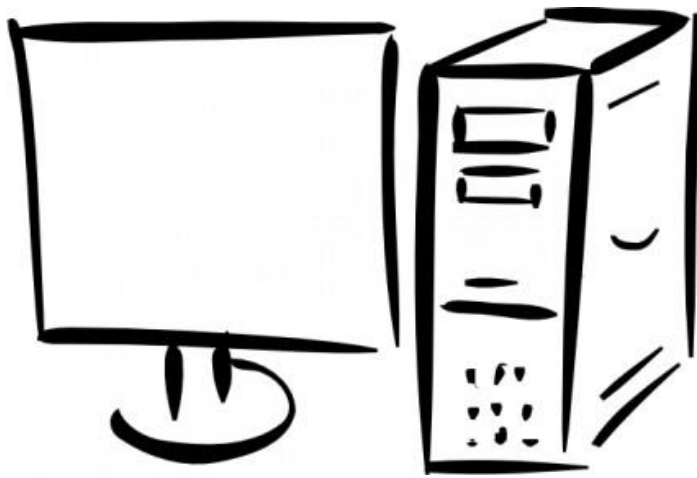


# Internet Programming & E-Commerce

ITEC301 - 2018



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## Table of Contents

Client Details.....	2
Question 1 .....	2
Question 2 .....	2
2.1 Background .....	2
2.2 Problem Statement.....	3
2.3 Target Audience .....	3
2.4 Recommendations.....	4
a) Purpose .....	4
b) Site content.....	4
c) Design Methodology .....	5
d) Benefits.....	6
e) Design Consideration.....	6
Conclusion .....	7
Bibliography .....	8



## Client Details

**Client:** Dr Andre Van der Bijl

**Company:** CPUT

**Contact Number:** 0836776601

**Company area:** Research & publication

## Question 1

A proposal video introducing both the project and the client has been uploaded alongside this document to myLMS. The video has been created using Windows Movie Maker.

## Question 2

### 2.1 Background

Dr Andre Van der Bijl is a Senior Lecturer at the Cape Peninsula University of Technology (CPUT) in the Faculty of Education. He is an Assistant Research Chair to ETDP SETA Research Chair for Work Integrated Learning and Recognition of Prior Learning.

Dr Van der Bijl has served on multiple regional and national task teams and workgroups as well as workshops that resulted in the creation of the Vocational Education Orientation Programme, and the Diploma and an Advanced Diploma in Technical and Vocational Teaching. His work involves business studies, professional studies and education management.



*Figure 1 Dr Van der Bijl*

Dr Van der Bijl currently holds a master's degree in Education and a PhD in Higher Education as well as a Bachelor of Arts and Higher Diploma in Education (Commerce).

Dr Andre Van der Bijl has produced and continues to produce, publications for various third parties. These publications take the form of academic journals and publications available on the market. Most publications are published electronically, some as open source, others as proprietary.

Dr Van der Bijl has requested the creating of an e-commerce website that will catalogue his publications and make them more accessible to the general market.

## 2.2 Problem Statement

Dr Van der Bijl's work is not easily locatable on the internet. Dr Van der Bijl is lacking a professional platform from whence to advertise his publications.

## 2.3 Target Audience

The primary target audience for an individual academic's website is other academics whose research is related. This audience would want copies of published research for referencing purposes. They should be able to browse all published works and obtain additional information regarding the publications. Once they locate the desired publication there should be provided with purchasing information.

A secondary audience is people who want to purchase produced work from the publishers who have released the work.

Both audience types should be afforded the same high-quality user experience. The website needs to address both their needs seamlessly.

## 2.4 Recommendations

There are numerous aspects that need to be taken into consideration when designing a website.

### a) Purpose

A website needs to be created. According to Chaffey (2009), the internet is the most common tool used for the publication of information. The internet is primarily accessed through web browsers to display web pages using Hypertext Mark-up Language (HTML) (Chaffey, 2009).

The website will need to take the form of an e-commerce website. Franco & Regi (2016) defined e-commerce as any type of business, or commercial transaction, that takes place over the internet. The website will store Dr Van der Bijl's publication profile. The website will need to ensure that all systems are well designed for endures use (Noyes & Mills, 2006).

Most publications are published electronically, some as open source, others as proprietary. Sometimes content is available indefinitely, sometimes for a limited period. The electronification of knowledge production in higher education has resulted in the development of a number repositories for research outputs and publications. It has also created the need for academics to create their own websites into which research outputs can be recorded and from which information contained on other sites can be pointed.

Dr Van der Bijl has requested that as a part of the project his LinkedIn profile is updated. LinkedIn is a web service that specialises in online recruitment and job listing (Stair & Reynolds, 2016).

### b) Site content

The website's content will consist of information regarding Dr Van der Bijl and his publications. Academics produce knowledge in a variety of way, including books, conference papers and journal articles. The site will need to store two primary types of publications, namely: academic journals and publications available on the market, primarily textbooks. The journals will need to be linked to their relevant publications Universal Resource Locators (URLs). All textbooks will need to be linked to the relevant publication houses, such as Oxford University Press.

For journal articles, the website will need to store the title of the article, journal name, year, pages, journal volume and journal issue.

The website's content should conform to Nielsen's usability heuristics to ensure that all interfaces comply with well establish and tested design principles (Rogers, et al., 2011). On each iteration, all user interfaces should be evaluated (Stair & Reynolds, 2016).

As JavaScript was created with the express intention of being used in websites (Gaddis, 2016), the website will make use of JavaScript to enhance its functionality. As most websites are created using HTML, a mixture Hypertext Preprocessor (PHP), Cascading Stylesheets (CSS) and JavaScript (Chaffey, 2009), these languages ideally suited for the creation of an e-commerce website.

### c) Design Methodology

There are two primary types of methodologies that could be used to develop the new system, a sequential approach, as suggested by Sommerville (2011) or Pressman and Maxim (2015), or an agile approach as suggested by Stair and Reynolds (2016).

Sequential models, such as the waterfall model (Pressman & Maxim, 2015; Sommerville, 2011), are highly structured and require large amounts of project overhead (Sachdeva, 2016). For the development of this project, I will be adopting an agile approach.

Agile approaches call for a project to be developed in iterative stages (Buttrick, 2013). Agile approaches are ideally suited for the development of software projects (Pathak, et al., 2012). When compared to sequential approaches, such as the waterfall model (Pressman & Maxim, 2015; Sommerville, 2011), agile management processes are less structured. The scrum management process is highly effective when under the right project conditions when implemented correctly. Sachdeva (2016) states that there are two main agile approaches, namely: Scrum and Extreme Programming (XP).

According to Schwalbe (2012), Scrum is the most popular agile method. Scrum can be used to effectively deliver complex projects (Sachdeva, 2016; Schwalbe, 2012). This can be attributed to Scrum's allowance for real-time decision-making (Sachdeva, 2016). This allows Scrum to be ideal for managing a project where the project requirements and scope are subject to change frequently in order to suit a client demands or market changes

In conclusion, the Scrum is a project management process, when applied to software development correctly, is highly effective (Sachdeva, 2016). The Scrum management process requires project managers to divide the project to logical divide the projects into chunks and conquer them individually. For this project, I will be making use of Scrum.

#### d) Benefits

Today's marketers are able to make use of the internet to gain a competitive advantage (Botha & Musengi, 2012). Chaffey (2009) stated that e-commerce has two main benefits: larger potential customer base and cost reduction. A size of a business customer base and cost of operations have direct impacts on the potential profits of the business. In addition to these benefits, Franco & Regi (2016) highlighted the following advantages for customers:

1. Convince;
2. More available options;
3. Less timeous; and;
4. Easy to compare and review products.

It is clear that the effective implementation of e-commerce principle will have a positive impact on both the day to day operations of a business and the overall profitability of the business.

#### e) Design Consideration

The system will need to be developed with modern heuristics and design principles in mind to provide users with a holistic experience. Noyes & Mills (2006) defined a heuristic evaluation as a systematic evaluate all interfaces against well-established usability principles. Valacich *et al.* (2009) suggested adhering to the following guidelines:

1. Menu-driven navigation;
2. Forms and data integrity rules;
3. Lightweight graphics;
4. Support for mobile devices; and;
5. Style sheet-based HTML.

The usage of lightweight graphics should allow the webpage to have a reduced load time (Valacich, et al., 2015). Style sheet-based HMTL will enable the content of the website to remain separate from the styling/style sheets of the website (Valacich, et al., 2015). Style sheet-based HMTL can be implemented through the correct implementation of CSS.

Ultimately the system should strictly adhere to the ten heuristics for interactive system proposed by Nielsen (1994).

## Conclusion

In conclusion, it is clear that a website needs to be created. As suggested by Sachdeva (2016), this project will make use of the Scrum manage process. As most websites are created using HTML, a mixture PHP, CSS and JavaScript are ideally suited for the creation of an e-commerce website (Chaffey, 2009). The website should make use of modern design principles and techniques.

Ultimately, final deliverable should provide Dr Van der Bijl with an e-commerce website that catalogues his publications.



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