

## Module: Statistics 281

<b>Module name:</b>	Statistics 281
<b>Code:</b>	STA281
<b>NQF level:</b>	6
<b>Type:</b>	Core – Bachelor of Computing (all streams)
<b>Contact time:</b>	16 hours
<b>Structured time:</b>	4 hours
<b>Self-directed time:</b>	20 hours
<b>Notional hours:</b>	40 hours
<b>Credits:</b>	4
<b>Prerequisites:</b>	STA181

### Purpose

The overall purpose of the program is to produce graduates that can think clearly and critically and apply the knowledge of Business Statistics in decision making when solving business problems and build a culture of informed decision making using statistical models.

### Outcomes

Upon successful completion of this module, the student will be able to:

- Detailed knowledge of the main areas of statistics, including an understanding of and the ability to apply the key terms, concepts, facts, principles, rules and theories of statistics to unfamiliar but relevant contexts; and knowledge of an area or areas of specialisation and how that knowledge relates to other fields, disciplines or practices.
- An understanding of different forms of knowledge, schools of thought and forms of explanation within statistics, and awareness of knowledge production processes.
- The ability to evaluate, select and apply appropriate methods, procedures or techniques in investigation or application processes within a defined context.
- The ability to identify, analyse and solve problems in unfamiliar contexts, gathering evidence and applying solutions based on evidence and procedures appropriate to statistics.
- The ability to evaluate different sources of information, to select information appropriate to the task, and to apply well-developed processes of analysis, synthesis and evaluation to that information.

### Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through written assignment, formative, and summative test.
- Final assessment through a written examination.





## Teaching and Learning

### Learning materials

#### *Prescribed Book*

Statistics: Distribution – IT Without Frontiers.

#### *Additional Material*

-  Presentation notes and hand-outs from direct instruction and feedback sessions;
-  Stroud, K.A. (2007). *Engineering Mathematics*. Palgrave. [ISBN: 9781403942463]
-  Wegner, T. (2016). *Applied Statistics*. JUTA. [ISBN: 9781485111931]
-  Rumsey, D. (2009). *Statistics II for Dummies*. Wiley. [ISBN: 9780470466469]

### Learning activities

The teaching and learning activities consist of a combination of formal lectures on theoretical concepts, exercises and discussions. One mandatory assignments must be completed during the course. The experiences and progress on these practical components form the content of class discussions.

### Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		14.0		6.0
Formative feedback		2.0		
Project				
Assignment	1			3.0
Test	1		2.0	5.0
Exam	1		2.0	6.0
		<b>16.0</b>	<b>4.0</b>	<b>20.0</b>

### Syllabus

- Probability distribution
- Binomial distribution
- Poisson distribution
- Normal distribution
- Sampling distributions