> **MODULE OVERVIEW**
> **SERVICE OPERATION PROCESSES**

1. GETTING STARTED

Welcome to Service Operation Processes (IRM4727).This module forms part of the Advanced Diploma in Information Resource Management (90007) offered by the Unisa School of Computing. I would like to take this opportunity to wish you success with your academic year.

This is a 3rd-year level module which focuses on managing the delivery of Information Technology (IT) services to an organisation's internal and external customers through the application of contemporary, relevant and practical IT management approaches to South African organisational case studies. This will assist you in the workplace by developing a practical solution-oriented mindset.

This is a 12-credit course, so you are expected to spend at least 120 hours in total working on the course, which is equivalent to at least 120 days or about 5 and a half months @ 1 hour a day.

Your study material for this module includes:

- This module overview and the learning units.
- Your prescribed textbooks.
- Tutorial letter 101.
- The myUnisa site including the discussion forums.
- Any other tutorial matter you may receive during the course.

Details of your prescribed books are given later in this overview and in Tutorial letter 101. Tutorial Letter 101 can be accessed on myUnisa. You can do this by clicking on Official Study Material in the menu on the left. It is extremely important that you read this tutorial letter carefully. This Module Overview:

- Gives you an overview and general information about the module.
- Familiarises you with the prescribed textbooks.

- • Familiarises you with the <u>complex MCQs</u> that you will encounter in the assignments and the exam.

This overview, the learning units, prescribed textbooks and tutorial letters contain everything you need to complete this module. However, because this is an online module you will benefit greatly from using the module website on myUnisa. By using the site, you can:

- • Submit assignments.
- • Access your online learning units.
- • Have access to the Unisa Library functions.
- • Participate in online discussions with your lecturer and your fellow students using the discussion forums.
- • Gain access to a variety of learning resources and view various web resources online.

Check the site regularly for updates, posted announcements and additional resources uploaded throughout the year.

2. PURPOSE AND OUTCOMES OF THE MODULE

The module focuses on managing the delivery of Information Technology (IT) services to an organisation's internal and external customers through the application of contemporary, relevant and practical IT management approaches to South African organisational case studies. You will be introduced to the concept of IT service management and the best practice implementation of IT service management, being ITIL® version 4, and the concept of DevOps, Agile and Lean and then how they can be integrated for optimal organisational performance.

You will learn about IT service management roles and relationships and their importance. You will be introduced to the four dimensions of service management and the service value system including the aspects of opportunity, demand, value, guiding principles, governance and the service value chain. You will learn about the general management practices, service management practices and technical management practices. You will learn about the DevOps roles, team structures and synergies, and how the ITIL® processes and DevOps process can be integrated and complementary for improved IT performance during IT development and support and operations.

More specifically, after completing the module, you will be able to:

- Evaluate operating the IT organisation as services, with reference to business and organisational performance, value and competitiveness.

- Articulate the rationale and benefits of operating the IT organisation as services, in terms of external and internal business environments, pressures, requirements and stakeholders.

- Assess the risks facing an IT organisation that is not operated as services, in relation to technology silos and the consequential business impacts.

- Demonstrate the key aspects of IT service operations, including processes, functions, roles and controls.

- Analyse the specialized IT service operation capabilities, skills and resources, which are necessary to provide the required services to the business.

- Examine the people, processes and technologies comprising IT service operations, and their configurations for efficient and effective services.

- Specify what capabilities, functions, processes, roles, metrics and controls are required for optimal IT service operations, including how they should be practically operationalised.

- Apply IT service operations to a selected organisation, with an emphasis on managing IT from a business perspective.

- Solve a selected organisation's IT service operations issues, balancing competing factors such as change and status quo, IT and business perspectives, stability and responsiveness, quality and cost and being reactive or proactive.

- Plan for optimising a selected organisation's IT service operations, by referring to the appropriate activities, processes, functions, roles and responsibilities and metrics that should be instituted.

- Examine a case study where the IT service operations are applied to an organisation to address the specific case study problems and objectives.

- Assess the implementation of IT service operations in a selected organisation, clarifying problems and offering convincing solutions.

- Analyse a case study illustrating the benefits and disadvantages of the IT service operations implementation in a selected organisation, and ways to mitigate any disadvantages.

- Critique a selected organisation's IT service operations implementation, with substantiated proposals for improvements.

- Explain the important and relevant inputs into the IT service value chain activities, with justifications for each input.

- Articulate the important and relevant outputs from the IT service value chain activities, with justifications for each output.

- Demonstrate the characteristics, implementation and value of the inputs to/outputs from the various service value chain activities.

3.   LEARNING RESOURCES

In the module you need to work through TWO textbooks, but don't worry because your assignments and the exam are OPEN BOOK. This means that you DO NOT need to memorise everything in these books. Instead, you need to know what these textbooks their chapters are about, where to find them and be able to analyse, apply synthesise and evaluate the principles, concepts and theories in all two textbooks. The more you study these textbooks the easier it will be to complete the assignments and exam.

You are required to demonstrate higher order thinking skills, which are critical thinking skills comprising synthesizing, analysing, reasoning, application and evaluation, as opposed to lower order thinking skills such as rote memorization. You need to apply the theory available in the prescribed textbooks to the specifics in the case studies to answer the assignment and exam questions.

Let's take a closer look at each textbook.

The first textbook is:

Agutter, C. (2020). ITIL® 4 Essentials: Your essential guide for the ITIL 4 Foundation exam and beyond, second edition. IT Governance Publishing. https://learning.oreilly.com/library/view/itil-4-essentials/9781787782204/   (Freely available ONLINE from Unisa's e-library – Safari Books Online (O'Reilly) database).

To find this FREE resource in the Unisa e-library go to:

https://www.unisa.ac.za/sites/corporate/default/ → Click the "Library" menu option → In the middle of the page, click on the block called "Find e-resources" → under "A-Z Databases", click the letter "O" → then click the "O'Reilly e-Books" link. One the next

page displayed, where it says "Welcome! Get instant access through your library. Select your institution" from the drop-down menu select "Not listed? Click here". Then, it will ask, "Just enter your academic institution email below:" and type in your myLife e-mail address (for example: 12345678@mylife.unisa.ac.za) and click the button called "Let's Go". And click the button called "Got It" on the next screen. You should be in the O'Reilly site. Then, on the top right-hand side click the search "looking glass" icon and type "ITIL® 4 Essentials: Your essential guide for the ITIL 4 Foundation exam and beyond, second edition" and press enter. Click on that book's link and click the "Start Reading Now" button to start reading. Use the top left (PREV) and right (NEXT) hand side arrows to move through the book.

In this textbook we start familiarising ourselves with ITIL® 4 and its main concepts and principles

<u>The second textbook is:</u>
Kaiser, A. K. (2018). Reinventing ITIL® in the Age of DevOps: Innovative Techniques to Make Processes Agile and Relevant. Apress. https://learning.oreilly.com/library/view/reinventing-itil-in/9781484239766/ (Freely available ONLINE from Unisa's e-library – Safari Books Online (O'Reilly) database).

<u>To find this FREE resource in the Unisa e-library go to:</u>
https://www.unisa.ac.za/sites/corporate/default/ → Click the "Library" menu option → In the middle of the page, click on the block called "Find e-resources" → under "A-Z Databases", click the letter "O" → then click the "O'Reilly e-Books" link. One the next page displayed, where it says "Welcome! Get instant access through your library. Select your institution" from the drop-down menu select "Not listed? Click here". Then, it will ask, "Just enter your academic institution email below:" and type in your myLife e-mail address (for example: 12345678@mylife.unisa.ac.za) and click the button called "Let's Go". And click the button called "Got It" on the next screen. You should be in the O'Reilly site. On the top right-hand side click the search "looking glass" icon and type "Reinventing ITIL® in the Age of DevOps: Innovative Techniques to Make Processes Agile and Relevant" and press enter. Then click on that book's link and

click the "Start Reading Now" button to start reading. Use the top left (PREV) and right (NEXT) hand side arrows to move through the book.

This textbook demonstrates that ITIL® can and should be used in conjunction with many other IT management approaches, frameworks and theories. This textbook explains how ITIL® and DevOps, an innovative approach to IT that is gaining success and recognition, can complement one another to the benefit of an organisation.

4.   HOW THE MODULE IS ASSESSED

As mentioned, your assignments and the exam are OPEN BOOK. In addition, your assignments and the exam comprise COMPLEX Multiple-Choice Questions (MCQs) only based on case studies.

Let's see what the COMPLEX MCQs look like and what processes you need to employ to answer them by working through a very simple example of the type of questions that will be in your assignments and exam.

General instructions for answering the COMPLEX MCQs:

- ALL the multiple-choice questions in this exam paper/assignment relate to the **case study**. Please read this case study AT LEAST TWO TIMES (TWICE) before attempting to answer any of the multiple-choice questions that follow. You MUST analyse this case study to answer the multiple-choice questions.

- ALL the exam paper/assignment multiple-choice questions refer DIRECTLY to specific content in the case study and the case study provides the IMPORTANT CONTENT that you need to answer the multiple-choice questions.

- The case study provides a scenario of Information Technology (IT) management in an organisational environment. The information presented in the case study is limited to the scope and purposes of the exam paper/assignment. DO NOT assume that anything is MISSING from or PRESENT in the case study scenario just because it is not mentioned in the case study scenario. All the scenario information that you need to attempt each question is provided in the case study and/or each question. No assumptions should be made on the basis that something was not mentioned in the case study.

- Answer ALL the multiple-choice questions.

- **NB: In each multiple-choice question**:

- o There are **FIVE** answer options (A, B, C, D, E).

- o You can choose/select only **ONE** of the answer options.

- o There is only **ONE MOST CORRECT** answer option and if you choose/select the one most correct answer option you get **TEN** marks.

- o There are also two answer options in each multiple-choice question that are **ALMOST CORRECT** and if you choose/select **ONE** of these almost correct answer options you get **FOUR** marks.

- o This means that the remaining two answer options in each multiple-choice question are the **LEAST CORRECT** and if you choose/select **ONE** of these least correct answer options you get **ZERO** marks.

- o So, you will **not** be penalised for incorrect answers. There is **no** negative marking, so attempt ALL multiple-choice questions.

How to answer these multiple-choice questions:

➤ **Read the multiple-choice question CAREFULLY so that you know exactly what is being asked**. If the multiple-choice question asks for the "most correct" answer, then select the answer that is most correct or has the least errors in it. So, the "most correct" answer may still contain errors but should contain the smallest number of errors compared to the other answer options.

➤ **LINK the multiple-choice question** to the **EXACT corresponding content in the case study**.

➤ **USE the EXACT corresponding content in the case study to LOOK UP/FIND** the **required course content in the prescribed textbook/s** to provide you with the correct information from the prescribed textbook/s to answer the multiple-choice question.

➤ **So,** you need to:

  1. **LINK** the **multiple-choice question** to the **EXACT corresponding content in the case study** and then

  2. **LINK** the **EXACT corresponding content in the case study** to the **required course content in the prescribed textbook/s**, and only then can you answer the multiple-choice question.

➤ Then, **analyse each answer option in the multiple-choice question**. For EACH answer option **COUNT how many CORRECT items** there are in that answer

option **AND/OR CHECK for LOGICAL CONSISTENTCY** (logical consistency means that all parts in a paragraph are true in relation to all other parts in the paragraph).

➢ Then, **select the answer option** that is the **most correct and/or logically consistent** based on <u>the multiple-choice question and case study and prescribed textbook/s</u>. Select only one answer option per multiple-choice question.

Example Case Study and COMPLEX MCQs:

EXAMPLE CASE STUDY: Garden inside the campus

Inside the campus, there is a huge garden for students to enjoy. The groundsman maintains the garden. In the garden, birds, cats, snails and ants have been found. However, the groundsman has a major concern about the damage to the flowers caused by the snails. To maintain the garden, the groundsman uses several tools, namely a spade, shovel, wheelbarrow, spading fork, edging wheel edger and string trimmer. The groundsman does not operate in isolation, and he says that the important inputs from the various campus managers are petty cash to pay for daily garden expenses from the finance manager, weekly maintenance schedules from the campus estate manager, access to the campus and buildings from the campus security manager and daily lunch from the restaurant manager.

Complex MCQ Type 1:

Following is a list of creatures that can be found in gardens <u>all over the city</u>:

1.   Dogs.
2.   Cats.
3.   Frogs.
4.   Birds.
5.   Mice.
6.   Snails.
7.   Ants.

Which one of the following combinations contains the **HIGHEST NUMBER** of creatures that have been found in the garden <u>inside the campus</u>?

A.   2, 3, 4, 5

B.   1, 2, 3, 7

C.   2, 4, 5, 6

D.   1, 2, 4, 5

E.   1, 3, 6, 7

HOW to solve this MCQ problem:

- _Read the example case study._
- _Read the example question._
- _**LINK** the example question to the **EXACT** corresponding content in the example case study._
- _Analyse each answer combination in the question._
- _For **EACH** answer combination **COUNT** how many **CORRECT** items are in that answer combination and **WRITE** that number next to that answer combination._
- _Then, select the answer combination with the highest number._

Complex MCQ Type 2:

Which answer option is the **MOST ETHICAL, LOGICAL AND COHERENT** for addressing the groundsman's major concern?

A. The groundsman can use various methods to remove the snails. An additional reason to remove the snails is that snails often carry parasites that can cause very serious diseases in people. One method to remove snails is to use snail poison, however, this poison is also deadly for cats. Therefore, the best method for this particular garden is to attract more birds to the garden because there are several types of birds that eat snails. Attracting more birds can be done by putting out bird seed each morning.

B. The groundsman can use various methods to remove the snails. An additional reason to remove the snails is that snails often carry parasites that can cause very serious diseases in people. One method to remove snails is to use snail poison, however, this poison is also deadly for cats. Therefore, the best method for this particular garden is to use poison because it is ok to kill a few cats to remove the snails

and save the flowers. Attracting more birds can be done by putting out bird seed each morning.

C. The groundsman can use various methods to remove the snails. An additional reason to remove the snails is that snails often carry parasites that can cause very serious diseases in people. One method to remove snails is to use snail poison, however, this poison is also deadly for cats. Therefore, the best method for this particular garden is to attract more birds to the garden because there are several types of birds that eat snails. Attracting more birds can be done by putting out bird poison each morning.

D. The groundsman can use various methods to remove the birds. An additional reason to remove the snails is that snails often carry parasites that can cause very serious diseases in people. One method to remove snails is to use snail poison, however, this poison is also deadly for cats. Therefore, the best method for this particular garden is to attract more birds to the garden because there are several types of birds that eat snails. Attracting more birds can be done by putting out bird seed each morning.

E. The groundsman can use various methods to remove the snails. An additional reason to remove the snails is that ants often carry parasites that can cause very serious diseases in people. One method to remove snails is to use snail poison, however, this poison is also deadly for cats. Therefore, the best method for this particular garden is to attract more birds to the garden because there are several types of birds that eat snails. Attracting more birds can be done by putting out bird seed each morning.

HOW to solve this MCQ problem:

- Read the example case study.
- Read the example question.
- **LINK** the example question to the **EXACT** corresponding content in the example case study.
- Analyse each answer option in the question.

- For **EACH** answer option **CHECK EVERY SENTENCE** for **LOGIC** and **COHERENCE** with the question and case study.
- Then, **select the answer option that is the most ethical and logical and coherent with the question and case study and answers the question**.

Complex MCQ Type 3:

Which one of the following answer options contains the **HIGHEST NUMBER** of tools used by the groundsman?

Garden Tools	Answer options				
	A	**B**	**C**	**D**	**E**
Spade	✔	✔	✔	✔	✔
Hand trowel		✔	✔		
Pruning shears	✔			✔	
Hoe			✔		
Gardening gloves		✔			
Shovel				✔	
Rake	✔				
Saw			✔		✔
Wheelbarrow		✔		✔	
Fork		✔			
Spading fork				✔	✔
Pick	✔		✔		
Trench shovel					✔
Post hole pincer	✔				
Edging wheel edger				✔	✔
Lawn Mower		✔			
Leaf blower	✔				✔
String trimmer		✔		✔	
Sprinkler	✔		✔		
Hose			✔		✔

> ### *HOW to solve this MCQ problem:*
>
> - *Read the example case study.*
> - *Read the example question.*
> - ***LINK*** *the example question to the* ***EXACT*** *corresponding content in the example case study.*
> - *Analyse each answer option in the question.*
> - *For* ***EACH*** *answer combination* ***COUNT*** *how many* ***CORRECT*** *items are in that answer combination and* ***WRITE*** *that number next to that answer combination.*
> - *Then, select the answer combination with the highest number.*

Complex MCQ Type 4:

Below is a list of **inputs to the groundsman** from various campus managers:

1. Petty cash.
2. Garden tools.
3. Garden equipment.
4. Diesel.
5. Weekly maintenance schedule.
6. Safety gear.
7. Electricity.
8. Access to the campus.
9. Water.
10. Daily lunch.

Which one of the following answer options provides the **MOST** correct combinations of **inputs to the groundsman** from various campus managers (most correct inputs from their correct campus manager allocations) according to what the groundsman says are the important inputs?

A.

Finance Manager	Estate Manager	Security Manager	Restaurant Manager
1	2, 3	8	10

B.

Finance Manager	Estate Manager	Security Manager	Restaurant Manager
1	3, 5	8	10

C.

Finance Manager	Estate Manager	Security Manager	Restaurant Manager
1	3, 5	6	10

D.

Finance Manager	Estate Manager	Security Manager	Restaurant Manager
1	3, 4	8	10

E.

Finance Manager	Estate Manager	Security Manager	Restaurant Manager
1	3, 5	8	9

HOW to solve this MCQ problem:

- *Read the example case study.*
- *Read the example question.*
- ***LINK*** *the example question to the* ***EXACT*** *corresponding content in the example case study.*
- *Analyse each answer option in the question.*
- *For* ***EACH*** *answer combination* ***COUNT*** *how many* ***CORRECT*** *items (****BOTH CORRECT INPUT AND CORRECT CAMPUS MANAGER ALLOCATION****) are in that answer combination and* ***WRITE*** *that number next to that answer combination.*
- *Then, select the answer combination with the highest number.*

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5. HOW THE CONTENT OF THE MODULE IS ORGANISED

There are four learning units, covering both textbooks, to help you progress through the learning material. The first learning unit presents the key concepts of service management, to establish why service management and ITIL® for service management is necessary and how ITIL® has moved into a value system framework

that can be integrated with many other innovative, practical and significant practices and frameworks, including DevOps, Agile and Lean. The ITIL® concepts of value and co-creation are introduced here. The first learning unit also includes key service management roles and relationships, explanations and definitions about products and services, utility, warranty, output, outcome, risk and value co-creation, service relationship concepts and the four dimensions of service management, namely organisations and people, information and technology, partners and suppliers and value streams and processes, which enables you to build a mental model of how all these key pieces fit together and the core principles of ITIL® 4.

The second learning unit explains the central idea of ITIL® 4, which is the Service Value System (SVS), being the model for how value is cocreated and includes the concept of the service value chain. The second learning unit also presents the SVS components of opportunity, demand and value, the seven guiding principles, namely focus on value, start where you are, progress iteratively with feedback, collaborate and promote visibility, think and work holistically, keep it simple and practical, optimise and automate, governance and the operating model called the service value chain, which has some resemblance to the ITIL® 3 life cycle model. The service value chain includes the activities of plan, improve, engage, design and transition, obtain/build and deliver and support.

The third learning unit introduces DevOps and explains what DevOps is, how and why it came about, the problems it addresses and its principles. It also details how DevOps relates to IT services, software development (Dev) and IT operations (Ops). The benefits of DevOps are also exposed with examples. In addition, DevOps is explained in relation to Agile and Lean. Importantly, DevOps directly addresses the typical and longstanding conflicts between IT development and IT operations teams. The third learning unit also highlights that the main objectives of ITIL® and DevOps are essentially the same, to deliver value to the business.

The fourth learning unit is where ITIL® and DevOps are analysed together, their strengths and weaknesses compared and contrasted to demonstrate where and how they can be beneficially integrated and begins the process of integrating ITIL® and DevOps by identifying the ITIL® processes and phases that need to be changed and those that do not need to be changed. The fourth learning unit also discusses how IT people are structured for successful outcomes, since people are required to develop,

manage and maintain IT systems, analyses the ITIL® and DevOps team structures and explains how they can be successfully integrated, examines how configurations are managed in a DevOps Project and explains incident, problem, change and release management adaption.

6. THE TEACHING APPROACH USED IN THE MODULE

The module is outcomes based, which means that what you need to be able to do by the end of the module is what guides the module design and teaching and learning. The IT competencies, skills and knowledge that you require in the work environment is a major part of the specified outcomes, so the module strives to help you develop those IT competencies, skills and knowledge.

In addition, the module requires active learning, where you are required to read, study and learn by applying the required competencies, knowledge and skills in real-life situations. To encourage active learning, there are activities for you to do throughout the learning units. IN addition, you are encouraged to discuss and solve problems with fellow students on myUnisa in the discussion forums. Participating and completing these activities will contribute to meaningful learning develop the competencies, knowledge and skills required in your IT career.

Wishing you success with your academic year.