UNSW Course Outline

ZBUS8306 Sustaining Capability (Capability and Technology Management College) - 2024

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General Course Information

Course Code : ZBUS8306
Year : 2024
Term : Semester 2
Teaching Period : Z2
Is a multi-term course? : No
Faculty : UNSW Canberra
Academic Unit : UC School of Business
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : UNSW Canberra at ADFA
Campus : UNSW Canberra
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course is tailored to meet the requirements of the Capability and Technology Management

College (CTMC). The course aims to examine the concepts and techniques required to sustain the physical asset elements of a capability. The course will provide students with various case studies to examine world's best practice as well as physical asset management sustainment failures. These cases include civilian and military applications. The course covers the various aspects of physical asset sustainment, in particular: maintenance and inventory requirements, fundamental inputs to capability (FIC) requirements, the establishment and operation of supply chains and configuration management systems required and the use of life cycle costing (LCC) to support a physical asset fleet throughout its life cycle. Through a series of lecture presentations, discussions and workshops, students will develop an understanding of physical asset sustainment.

Course Aims

This course aims to help students prepare for making decisions related to the sustainment phase of the asset management. The students are introduced to the Life Cycle Concept and Integrated Logistics Support Philosophy for providing inputs to the decision-making process. Students are also exposed to concepts of Configuration Management, Information Management and Reliability of systems.in order to make them holistically aware of the sustainment aspects of equipment. Students should complete the course with a clear understanding of the level of effort required in preparing for the sustainment phase of the lifecycle during acquisition. Most importantly, they will understand what under investment in sustainment costs in asset availability, reputation and additional funds to recover.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Critically appraise and make theoretical contributions to the identification of maintenance requirements, inventory requirements and other fundamental inputs to capability (FIC) requirements to ensure the efficient and effective asset availability in the sustainment phase of the physical asset life cycle.
CLO2 : Critically appraise and make theoretical contributions to the establishment and operation of efficient and effective supply chains in support of physical assets.
CLO3 : Critically appraise and make theoretical contributions to the configuration management throughout the life cycle of physical assets.
CLO4 : Critically appraise and make theoretical contributions to the use of Life Cycle Costing (LCC) principles to manage physical assets efficiently and effectively.

Course Learning Outcomes	Assessment Item
CLO1 : Critically appraise and make theoretical contributions to the identification of maintenance requirements, inventory requirements and other fundamental inputs to capability (FIC) requirements to ensure the efficient and effective asset availability in the sustainment phase of the physical asset life cycle.	• Syndicate participation and presentations • Video presentation • Written assessment
CLO2 : Critically appraise and make theoretical contributions to the establishment and operation of efficient and effective supply chains in support of physical assets.	• Syndicate participation and presentations • Video presentation • Written assessment
CLO3 : Critically appraise and make theoretical contributions to the configuration management throughout the life cycle of physical assets.	• Syndicate participation and presentations • Written assessment
CLO4 : Critically appraise and make theoretical contributions to the use of Life Cycle Costing (LCC) principles to manage physical assets efficiently and effectively.	• Syndicate participation and presentations • Written assessment

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

Materials are supplied for self-paced learning including readings, videos and lecture slides so

that course members are able to prepare appropriately for syndicate discussions and lectures. Syndicate discussion aim to prepare course members in smaller groups to discuss issues around particular subjects prior to the lecture. With prior preparation the lecture on the topic concerned should be very rich and allow as much experience to be drawn from course members as possible enabling the theory to be discussed with real world scenarios.

Workload

Students are expected to undertake an average of 10 hours of study per week for a 6 UOC course. This includes engagement with course readings and other activities, assessment preparation and research, as well as contact time with the lecturer and fellow students.

Other Professional Outcomes

Developing Program Attributes

Students will be encouraged to develop the following School of Business program attributes by undertaking the course activities and mastering the knowledge content:

1: Business knowledge

Students will make informed and effective selection of asset management decisions, understanding the challenges of complexity, country of origin and force integration for assets in the sustainment and retirement phases of the lifecycle.

2: Problem solving

Students will define and address problems and propose effective evidence based solutions in capability sustainment through application of rigorous analysis and critical thinking.

3: Business communication

Students will harness, manage and communicate capability sustainment information effectively using multiple forms of communication, as demonstrated through presentations and the written assignment.

4: Teamwork

Students will interact and collaborate effectively with others to achieve a common capability sustainment purpose in ensuring the highest levels of asset availability, in accordance with Government requirements for the least resource investment.

5: Responsible business practice

Students will develop and be committed to responsible capability management thinking and

approaches which are underpinned by ethical professional practice and sustainability considerations.

6: Global and cultural competence
Students will be aware of capability management in the wider world and actively committed to recognise and respect the cultural norms, beliefs and values of others. They will apply this knowledge to interact, communicate and work effectively in diverse environments to develop capability sustainment plans.

7: Leadership development
Students will develop the capacity to take initiative, encourage forward thinking and bring about innovation in capability sustainment, while effectively influencing others to think about the importance of capability management.

Developing Graduate Capabilities
Successful completion of this course contributes to the acquisition of UNSW graduate capabilities. UNSW aspires to develop globally focused graduates who are **rigorous scholars**, capable of **leadership** and **professional practice** in an **international** community.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Syndicate participation and presentations Assessment Format: Group	20%	Start Date: Not Applicable Due Date: In class Post Date: 24/10/2024 11:30 PM
Video presentation Assessment Format: Individual Short Extension: Yes (7 days)	40%	Start Date: Not Applicable Due Date: 23/08/2024 11:59 PM Post Date: 06/09/2024 11:30 PM
Written assessment Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: 01/11/2024 11:59 PM Post Date: 28/11/2024 03:00 PM

Assessment Details

Syndicate participation and presentations

Assessment Overview

Students will be given case studies/research papers to discuss individual topics. The students will be marked based on their presentation skills, knowledge on the subject and the level of

participation.

Course Learning Outcomes

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- CLO2 : Critically appraise and make theoretical contributions to the establishment and operation of efficient and effective supply chains in support of physical assets.
- CLO3 : Critically appraise and make theoretical contributions to the configuration management throughout the life cycle of physical assets.
- CLO4 : Critically appraise and make theoretical contributions to the use of Life Cycle Costing (LCC) principles to manage physical assets efficiently and effectively.

Detailed Assessment Description

Please see the course Moodle site for a detailed description of this assessment. Information will be made available in Week 1.

Permitted use of AI tools: SIMPLE EDITING ASSISTANCE

For this assessment task, you may use AI-based software to research and prepare prior to completing your assessment. You must not use any functions that generate, paraphrase or translate passages of text, whether based on your own work or not.

Please refer to the General Assessment Information section below for information on the requirement to include a cover sheet/declaration with all assessments, disclosing whether AI tools were used.

Assessment Length

Please see the course Moodle site for more information

Assignment submission Turnitin type

Not Applicable

Video presentation

Assessment Overview

Each student will give a video presentation of 15 minutes. Students will pick a relevant case and deliberate on the application of Integrated Logistics Support through the acquisition and the sustainment phases.

Course Learning Outcomes

- CLO1 : Critically appraise and make theoretical contributions to the identification of maintenance requirements, inventory requirements and other fundamental inputs to capability (FIC) requirements to ensure the efficient and effective asset availability in the sustainment phase of the physical asset life cycle.
- CLO2 : Critically appraise and make theoretical contributions to the establishment and operation of efficient and effective supply chains in support of physical assets.

Detailed Assessment Description

Please see the course Moodle site for a detailed description of this assessment. Information will be made available in Week 1.

Permitted use of AI tools: SIMPLE EDITING ASSISTANCE

For this assessment task, you may use AI-based software to research and prepare prior to completing your assessment. You must not use any functions that generate, paraphrase or translate passages of text, whether based on your own work or not.

Please refer to the General Assessment Information section below for information on the requirement to include a cover sheet/declaration with all assessments, disclosing whether AI tools were used.

Assessment Length

15 minutes

Assignment submission Turnitin type

Not Applicable

Written assessment

Assessment Overview

Each student will select a fleet of assets which has suffered because of the failures in the sustainment phase of the equipment life cycle. The students will focus on identifying the reasons for the failure including the inadequacies in the acquisition phase. The students will also suggest measures to recover the availability of the fleet.

Course Learning Outcomes

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- CLO4 : Critically appraise and make theoretical contributions to the use of Life Cycle Costing (LCC) principles to manage physical assets efficiently and effectively.

Detailed Assessment Description

Please see the course Moodle site for a detailed description of this assessment. Information will be made available in Week 1.

Permitted use of AI tools: SIMPLE EDITING ASSISTANCE

For this assessment task, you may use AI-based software to research and prepare prior to completing your assessment. You are permitted to use standard editing and referencing functions in word processing software in the creation of your submission. You must not use any functions that generate or paraphrase passages of text, whether based on your own work or not.

Please note that your submission will be passed through an AI-generated text detection tool. If your marker has concerns that your answer contains passages of AI-generated text you may be asked to explain your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

Please refer to the General Assessment Information section below for information on the requirement to include a cover sheet/declaration with all assessments, disclosing whether AI tools were used.

Assessment Length

3500 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

General Assessment Information

Referencing

Please use Harvard or APA 7th edition referencing style. For more information, see the course Moodle site.

https://www.student.unsw.edu.au/referencing

Ethical and Responsible Use of Artificial Intelligence at UNSW

At UNSW, students must use artificial intelligence ethically and responsibly.

This includes:

- Adhering to course/assessment guidelines regarding use of AI tools;
- Acknowledging AI-generated content in your assessments, following UNSW guidance on Referencing and acknowledging the use of artificial intelligence tools. In the School of Business, students are required to include a **cover sheet/declaration** for all assessments (see the Assessments Hub on the Course Moodle site). If you do not submit a completed cover sheet/declaration with your assessment, you will be emailed to request resubmission of your assessment with the required cover sheet/declaration (noting your assessment will not be graded until the cover sheet is included);
- Not including your own or others' personal or private information in prompts;
- Verifying and critiquing all AI generated material; and
- Avoiding using AI tools to translate your writing.

Please refer to Ethical and Responsible Use of Artificial Intelligence at UNSW for further information.

Short Extensions (School of Business, Postgraduate)

An automatic Short Extension (without documentation) of **seven calendar days** may be available for some assessment tasks in this course. Please check assessment instructions and further guidance on the course Moodle site.

You can apply by accessing the Short Extension Student Portal on the Special Consideration login page.

Applications for Short Extensions MUST be submitted before the assessment due date. Late applications are not permitted. If you do not apply on time, you will have to submit a Special Consideration application with the appropriate supporting documentation, within 3 working days of the assessment due date.

Only one Short Extension can be granted for any given assessment. All subsequent extension requests must be submitted as a Special Consideration application.

For assessment tasks where a Short Extension is not available, students needing an extension (of any duration) must apply via the Special Consideration process.

Special Consideration

Applications for Special Consideration should be submitted BEFORE the assessment due date.

If extenuating circumstances prevent you from submitting an application before the due date, please notify your course convenor by email and submit the application as soon as possible.

If your application is approved, the outcome may be one of the following:

- A supplementary or alternative assessment,
- An extended deadline for the assessment (note the extension granted is normally equivalent to the period of impact outlined in your supporting documentation),
- An aggregated or averaged mark derived from other comparable completed assessments.

Please note, applying for Special Consideration does not automatically mean that you will be granted additional assessment, or that you will be awarded an amended result.

More information on Short Extensions and Special Consideration: https://www.student.unsw.edu.au/special-consideration.

Late Submission of Assessment

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessment tasks where a penalty applies,
- capped at five days (120 hours) from the assessment submission deadline. In case of approved Equitable Learning Plan (ELP) provision, special consideration or short extension, the late penalty applies from the date of approved time extension. After five days from the original or extended deadline, a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet assessment task submission and completion deadlines, and to apply for extensions as early as possible before the assessment task deadline.

Grading Basis

Standard

Requirements to pass course

Students must achieve at least 50% overall to pass the course. Students are expected to engage actively in course learning activities and attempt all assessment requirements in the course.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 15 July - 19 July	Lecture	Overview and Introduction to ZBUS8306 Sustaining Capability Lecture: Logistics Engineering- Systems Approach and ILS
Week 2 : 22 July - 26 July	Group Activity	Syndicate Discussion: Logistics Engineering- Systems Approach and ILS Lecture: Logistics Engineering- Systems Approach and ILS
Week 3 : 29 July - 2 August	Group Activity	Syndicate Discussion: Reliability by Design Lecture: Reliability by Design
Week 4 : 5 August - 9 August	Group Activity	Syndicate Discussion: Reliability by Operator Lecture: Reliability by Operator
Week 5 : 12 August - 16 August	Group Activity	Syndicate Discussion: Lifecycle Costing Lecture: Lifecycle Costing
Week 6 : 19 August - 23 August	Other	Prep time for Video Presentation
Week 7 : 9 September - 13 September	Group Activity	Syndicate Discussion: Reliability Management and Maintenance Optimisation Lecture: Reliability Management and Maintenance Optimisation
Week 8 : 16 September - 20 September	Group Activity	Syndicate Discussion: Inventory Management & Control Lecture: Inventory Management & Control
Week 9 : 23 September - 27 September	Group Activity	Syndicate Discussion: Materials Management Optimisation Lecture: Materials Management Optimisation
Week 10 : 30 September - 4 October	Group Activity	Syndicate Discussion: Configuration Management Lecture: Configuration Management
Week 11 : 7 October - 11 October	Other	Discretionary leave period and prep time for final assessment
Week 12 : 14 October - 18 October	Group Activity	Syndicate Discussion: Information Management Lecture: Information Management
Week 13 : 21 October - 25 October	Other	Course Overview Prep Time for Written Assessment

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

Please see the course Moodle site for more information.

Course Resources

Prescribed Resources

Blanchard, B. S., 2004. *Logistics Engineering and Management.* Pearson Prentice Hall, 6th ed.

Campbell, J.D., Jardine, A.K., McGlynn, J. and Barry, D.M. eds., 2024. *Asset management excellence: optimizing equipment life-cycle decisions*. CRC Press.

Mangan, J. and Lalwani, C., 2020. *Global logistics and supply chain management*. John Wiley & Sons.

https://unsw.alma.exlibrisgroup.com/leganto/readinglist/lists/61422972950001731?auth=SAML

Course Evaluation and Development

Student evaluation of this course will take the form of an end of semester myExperience evaluation. The course convenor welcomes feedback on an ongoing basis on the topics, materials and assessment activities used in this course.

1. The students from the previous courses had suggested that the delivery in intensive mode (2 weeks for SusCap) is not an ideal scenario. They would like to have a semester-long course with one day a week dedicated to SusCap. The suggestion has been implemented.
2. Some students had given feedback that Syndicate sessions involve a lot of work but are not weighted adequately. The weightage for Syndicate participation and presentation has been increased to 20% based on the feedback.
3. Many students had raised an issue with the exam system of marking. It was felt that an assessment based on verbal communication skills would be more appropriate, as this is one skill that the students will need to have post-completion of the course. It has been decided to replace the 3-hour exam with a video presentation on a sustainment topic.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the UNSW Code of Conduct and Values.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Dr Matthew McCormack		Building 27, Room 218, School of Business, UNSW Canberra	+61 2 5114 5676	Please email for appointment	Yes	Yes
Lecturer	Dr Pankaj Sharma		Building 27, Room 205, School of Business, UNSW Canberra	+61 2 5114 5320	Please email for appointment	No	No

Other Useful Information

School Contact Information

School of Business

Email: Business@adfa.edu.au