



# COMP8760

## Enterprise Application Integration

Session 1, Special circumstances 2021

*School of Computing*

### Contents

---

<a href="#"><u>General Information</u></a>	2
<a href="#"><u>Learning Outcomes</u></a>	2
<a href="#"><u>General Assessment Information</u></a>	3
<a href="#"><u>Assessment Tasks</u></a>	3
<a href="#"><u>Delivery and Resources</u></a>	7
<a href="#"><u>Unit Schedule</u></a>	7
<a href="#"><u>Policies and Procedures</u></a>	9
<a href="#"><u>Changes from Previous Offering</u></a>	10
<a href="#"><u>Standards</u></a>	11

---

#### **Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

#### **Notice**

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

## General Information

Unit convenor and teaching staff

Unit Convenor

Matthew Mansour

[matthew.mansour@mq.edu.au](mailto:matthew.mansour@mq.edu.au)

TBA

Credit points

10

Prerequisites

COMP6760 or ITEC601

Corequisites

Co-badged status

Unit description

This unit focuses on integration technologies from internal application integration to external business-to-business integration. Integration activities start with a process model and process redesign targets. We use the market leading IBM BlueWorks Live software to define our processes. Application integration techniques such as data orientated, application interfaces, message orientated middleware and application servers are covered. The role of Web APIs and RESTful architecture is considered, as well cloud based infrastructure, platforms and SaaS. We then consider B2B integration with EDI and Web Services, and the role of portals. We explore the objectives of business process management and supply chain planning and consider a recent innovative government integration initiative as a student presented case study.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

**ULO1:** Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.

**ULO2:** Apply an understanding of integration technologies to critically analyse

contemporary B2Bi case studies.

**ULO3:** Critically evaluate application integration technologies such as APIs, database integration, application servers, Web Services, REST and business process management systems and be able to recommend the most suitable technology for the situation.

**ULO4:** Demonstrate confidence in a range of skills including leadership, communication, critical analysis, problem-solving and creative-thinking skills.

## General Assessment Information

**Late Submission(s):** *“Late assessment must also be submitted through Turnitin. No extensions will be granted. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission incurs a 20% penalty). Late submissions will not be accepted after solutions have been discussed and/or made available. This penalty does not apply for cases in which an application for Special Consideration is made and approved. Note: applications for Special Consideration Policy must be made within 5 (five) business days of the due date and time.”*

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Assignment 1</u>	15%	No	Week 4
<u>Assignment 2</u>	15%	No	Week 9
<u>Assignment 3</u>	10%	No	Week 12
<u>Group and individual presentation</u>	10%	No	Week 12
<u>Online examination</u>	50%	No	TBA

### Assignment 1

Assessment Type <sup>1</sup>: Modelling task

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 4**

Weighting: **15%**

You are given an actual procurement process. This is to be modelled as the ‘As Is’ Process using IBM Blue Works Live SaaS software. Metrics such as process cost and time are to be derived. Based on the objectives of business process reengineering, an automated, improved ‘To Be’ process is to be proposed. The new process is to be assessment according to the

modelling metrics as well as an ROI justification.

On successful completion you will be able to:

- Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.

## Assignment 2

Assessment Type <sup>1</sup>: Case study/analysis

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 9**

Weighting: **15%**

You are given a well researched case study about the introduction of electronic medical records in the US. The case highlights the technological, management and organisational challenges of this immense application integration undertaking. Students are required to answer questions about the case study and provide As Is and To Be process models for one of the system's components.

On successful completion you will be able to:

- Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.
- Critically evaluate application integration technologies such as APIs, database integration, application servers, Web Services, REST and business process management systems and be able to recommend the most suitable technology for the situation.
- Demonstrate confidence in a range of skills including leadership, communication, critical analysis, problem-solving and creative-thinking skills.

## Assignment 3

Assessment Type <sup>1</sup>: Design Task

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 12**

Weighting: **10%**

Students form groups of 4, and choose a contemporary SaaS implementation case study from a given list of published recent studies. The team is to identify the possible opportunities for improvement to the existing As Is Process. Then, model the given new To Be Process as described in the case study and demonstrate how it delivers significant business benefits and identify the metrics to manage and quantify the benefits. The team is to submit a structured report comprised of each member's contribution and then each member is to give a class presentation on their findings.

On successful completion you will be able to:

- Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.
- Apply an understanding of integration technologies to critically analyse contemporary B2Bi case studies.
- Critically evaluate application integration technologies such as APIs, database integration, application servers, Web Services, REST and business process management systems and be able to recommend the most suitable technology for the situation.
- Demonstrate confidence in a range of skills including leadership, communication, critical analysis, problem-solving and creative-thinking skills.

## Group and individual presentation

Assessment Type <sup>1</sup>: Presentation

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 12**

Weighting: **10%**

Firstly, each group will be allocated a minor project and be expected to present their findings regarding an ongoing class case study of a contemporary B2B integration initiative. Secondly, each student is to present on their component of the Assignment 3 Group Report. It is up to each team to structure their activities to meet the overall dual requirements of the two presentations.

On successful completion you will be able to:

- Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.

- Apply an understanding of integration technologies to critically analyse contemporary B2Bi case studies.
- Critically evaluate application integration technologies such as APIs, database integration, application servers, Web Services, REST and business process management systems and be able to recommend the most suitable technology for the situation.
- Demonstrate confidence in a range of skills including leadership, communication, critical analysis, problem-solving and creative-thinking skills.

## Online examination

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 50 hours

Due: **TBA**

Weighting: **50%**

An open book online examination undertaken in a 6 hour window of time with scripts submitted through iLearn.

On successful completion you will be able to:

- Apply an understanding of process modelling to analyse an existing 'As Is' process and be able to compare and contrast with proposed improved 'To Be' processes for process improvement and optimisation.
- Apply an understanding of integration technologies to critically analyse contemporary B2Bi case studies.
- Critically evaluate application integration technologies such as APIs, database integration, application servers, Web Services, REST and business process management systems and be able to recommend the most suitable technology for the situation.

---

<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

Each week we will run a live seminar for 2 hours (via Zoom) plus a non compulsory tutorial hour which is more set for groups to have a time to work with other members. For details of days, times consult the [timetables webpage](#).

### Recommended Texts

We have a mandatory textbook that we will be following very closely for lectures and tutorial exercises as follows:

**Dumas, M et al Fundamentals of Business Process Management, 2e, Springer, 2018**

Fortunately, this textbook is available as a free ebook from our library website, through the following link: <https://link-springer-com.simsrad.net.ocs.mq.edu.au/book/10.1007%2F978-3-662-56509-4>

Additional references that are available for loan from the library are:

**Douglas K. Barry (2013) Web Services, Service-Orientated Architectures and Cloud Computing, 2e, Morgan Kaufmann, Sydney**

**David S. Linthicum (2009) Cloud Computing and SOA Convergence in Your Enterprise: A Step-by-Step Guide, Addison Wesley, Sydney**

**Jason Bloomberg (2013) The Agile Architecture Revolution: How Cloud Computing, REST-Based SOA, and Mobile Computing are Changing Enterprise IT, Wiley.**

Lecture handouts will list appropriate Web based references and further reading for some of the rapidly evolving technologies discussed in this course. All the lecture handouts and soft copy references will be available for download from the class Web site from Week 1 at: <https://ilearn.mq.edu.au/>

For consistency with our Dumas textbook, we will be using the Signavio Modelling Tool. You can obtain a free education licence at <https://academic.signavio.com/p/register> We use the latest BPMN 2.0 modelling notation.

Other technology required is MS Word, MS Visio (or draw.io) and MS PowerPoint. MS Visio is available free of charge from the University collaborative [Microsoft Imagine](#) website.

### Website and access to unit material:

The web page and content for this unit can be found at iLearn: <https://ilearn.mq.edu.au/login/MQ/>. Note that the unit content is not publicly available and requires for you to log in to access.

## Unit Schedule

Week	Topic	References
------	-------	------------

1	E-Commerce Introduction to Business Process Management No Practical in Week 1	Laudon and Traver, 2017 Chapter 1
2	Lean Methodology Essential Process Modelling Release Assignment One (Individual Assignment) 'Electronic Medical Records' Practical Exercises from Chapter 1	Mark Robinson, 2014 Chapter 3
3	Collaborative Commerce (ERP II) Advanced Process Modelling Practical Exercises from Chapter 3	Gartner Chapter 4
4	B2B Data Integration (EDI and EDI-INT) Process Identification Practical Exercises from Chapter 4 Assignment One Due	Coles Group Specifications Chapter 2
5	Web Services Introduction Process Discovery Practical Exercises from Chapter 2	Barry, 2013 Chapter 5
6	Services Orientated Architecture Qualitative Process Analysis Practical Exercises from Chapter 5	IBM, 2009 Chapter 6
7	E-Procurement Processes Quantitative Process Analysis Release Assignment Two (Individual Assignment) 'Hospital Procurement Process Model' Practical Exercises from Chapter 6	Gartner, 2015 Chapter 7
8	Data Orientated Application Integration Process Redesign Practical Exercises from Chapter 7	White, 2009 and Denodo, 2018 Chapter 8



9	Application Interfaces Process Aware Information Systems Assignment Two Due Release Assignment Three (Group Assignment) 'BPM with SaaS Solutions' Practical Exercises from Chapter 8	Faber Novel, 2012 Chapter 9
10	Application Infrastructure and Middleware Market Process Implementation with Executable Models Practical Exercises from Chapter 9	Gartner, 2018 Chapter 10
11	BPM and SOA Together Tutorial on Assignment 3	IBM, 2013
12	Group Presentations Assignment Three Due	
13	Group Presentations continued Revision	

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](mailto:ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](mailto:ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Changes from Previous Offering

To accommodate a new format of 2 hour lectures and 1 hour tutorials, a comprehensive textbook

has been adopted, Dumas et al, Fundamentals of Business Process Management, 2e, 2018, Springer.

This textbook has in chapter exercises that demonstrate the lecture material very well. These exercises have been used for the new tutorial structure.

This change required the adoption of Signavio, an excellent process modelling tool, which aligns with the textbook and has a free licence for educational purposes.

## Standards

HD	Apply techniques and knowledge in new contexts, show breadth and depth of understanding of business process modeling and its role in justifying investment in application integration technologies.	A sound grounding in designing application integration architectures, understanding the web services evolution to a Services Orientated Architecture and the role of Business Process Management.	Demonstrate leadership, creativity, critical thinking and analysis skills. Enthusiastic in acquiring new knowledge in the application integration area. Demonstrate capability in applying new application integration knowledge to solve real-world problems. Conduct team work effectively and play a key role in moving the whole project team forward.
D	Apply techniques and knowledge in some new contexts, show breadth and depth of understanding of across most of the business process modeling topics and its role in justifying investment in application integration technologies.	Apply techniques and knowledge in some new contexts, show breadth and depth of understanding across most of the topics: designing application integration architectures, understanding the web services evolution to a Services Orientated Architecture and the role of Business Process Management.	Demonstrate some leadership occasionally. Show creativity, critical thinking and analysis skills. Have the capability in applying application integration knowledge to solve real-world problems. Collaborate with team members well and finish assigned tasks on time and with good quality.
CR	Show breadth of understanding across most of the business process modeling topics and its role in justifying investment in application integration technologies.	Show breadth of understanding across most of designing application integration architectures, understanding the web services evolution to a Services Orientated Architecture and the role of Business Process Management.	Demonstrate analysis skills in some occasions. Know how to apply application integration to solve some of the real-world problems. Able to finish assigned tasks on time and with good quality most of the time.
P	Can reproduce definitions and ideas, show some breadth of understanding of the business process modeling topics and its role in justifying investment in application integration technologies.	Can reproduce some definitions and ideas, show some breadth on issues in how breadth of understanding across most of designing application integration architectures, understanding the web services evolution to a Services Orientated Architecture and the role of Business Process Management.	Demonstrate limited analysis skills. Can apply application integration knowledge to solve limited real-world problems. Able to finish all assigned tasks on time and with acceptable quality.

In this unit, your final grade depends on your performance in each part of the assessment. For each task, you receive a mark that combines your standard of performance regarding each learning outcome assessed by this task. Then the different component marks are added up to determine your total mark out of 100. Your grade then depends on this total mark and your overall standards of performance.

In order to pass the unit, you must obtain a total mark of 50% or higher.