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Research Methods and Professional Practice

Seminar 6

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Module Overview

- Unit 1: Introduction to Research Methods. The Scientific Investigation and Ethics in Computing
- Unit 2: Research Questions, the Literature Review and the Research Proposal
- Unit 3: Methodology and Research Methods
- Unit 4: Case Studies, Focus Groups and Observations
- Unit 5: Interviews, Survey Methods, and Questionnaire Design
- Unit 6: Quantitative Methods - Descriptive and Inferential Statistics
- Unit 7: Inferential Statistics and Hypothesis Testing
- Unit 8: Data Analysis and Visualisation
- Unit 9: Validity and Generalisability in Research
- Unit 10: Research Writing
- Unit 11: Going Forward: Professional Development and Your e-Portfolio
- Unit 12: Project Management and Managing Risk

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Seminars

Module Menu

- Module Home
- Tutor Office
- Deadline Details
- Seminars
- Module Resources
- e-Portfolio
- eBooks

Unit	Seminar Title
1.	Introduction
3.	Peer Review Activity
4.	Case Study on Privacy
7.	Inferential Statistics Workshop
8.	Workshop on Presenting Results
11.	e-Portfolio Preparation

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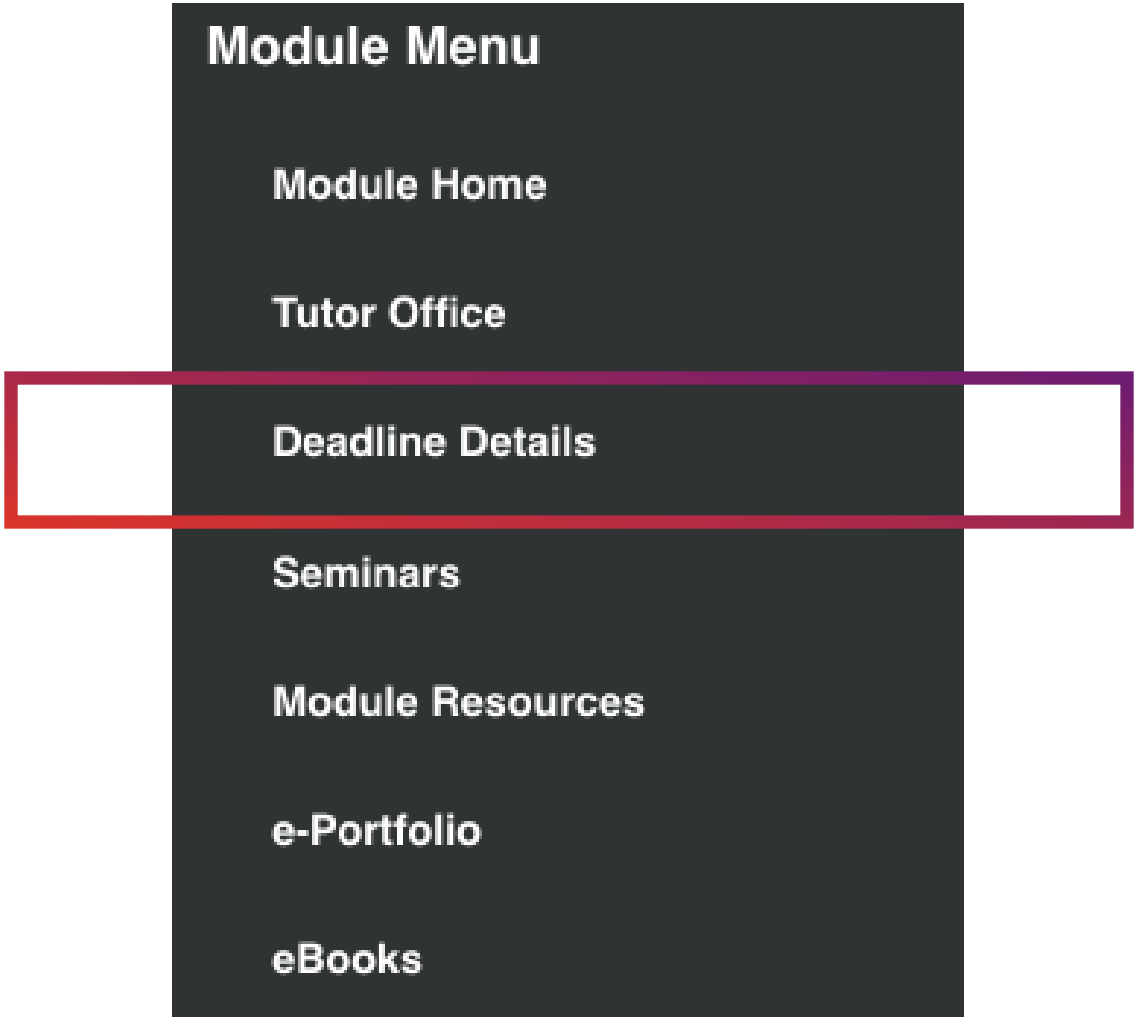
Deadline details



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Assessment

Assessment	Length/duration	Submission	Weighting
Literature Review	2,000 words	By end of Unit 7	30%
Research Proposal Presentation	15 Minute presentation and transcript	By end of Unit 10	30%
End of Module Assignment: e-Portfolio	2,500 words equivalent including 1,000 word reflective piece	By end of Unit 12	40%

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Unit 11: Going Forward: Professional Development and Your e-Portfolio

Unit 11 Seminar | 1 hr

Title: e-Portfolio Preparation

This unit has a live seminar. You will be able to see all the seminar times and dates in the menu on the left. View the Lecturecast(s) available and engage with the reading set for the specific unit prior to each seminar. To benefit from the seminar fully, please also view the seminar content available for each seminar in the seminar booklet and prepare answers to any questions posed.

Prepare for Your Seminar

Mark as done

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Unit 12: Project Management and Managing Risk

Formative Activity | 30 mins

Complete the self test below

Self Test Quiz — Mark as done

Assessment | 11 hrs

Weighting: 40% | **Word count:** Portfolio + 1,000 reflection

As a learning and development e-Portfolio, specific requirements for what should be included in your e-Portfolio are detailed in the "Module e-Portfolio Learning Activities" section.

End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece — Receive a grade

Feedback | 10 mins

Your feedback is a key component of our quality assurance and enhancement. Please take this opportunity to tell us about your experiences of the module.

End of Module Survey — Submit feedback

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Assessment

Assessment	Length/duration	Submission	Weighting
Literature Review	2,000 words	By end of Unit 7	30%
Research Proposal Presentation	15 Minute presentation and transcript	By end of Unit 10	30%
End of Module Assignment: e-Portfolio	2,500 words equivalent including 1,000 word reflective piece	By end of Unit 12	40%

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End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece

The final assessment in this module is an e-Portfolio that collates all the evidence of your work in this module and accounts for 40% of the overall module mark. Submit by the end of Unit 12.

The total word count for this assignment is 2,500. where the word count for the reflection itself is 1,000 words. (This also applies to your transcript should you want to use video elements.)

Assignment Details

As a learning and development e-Portfolio, specific requirements for what should be included in your e-Portfolio are detailed in the "Module e-Portfolio" section. Elaborating on the requirements and the applicable grading criteria (please see the full outline on the Module Resources page), your e-portfolio should consist of:

- All e-Portfolio/reflective activities you have completed throughout the module. **(Application of Knowledge weighted at 10%, Independent working weighted at 10%)**
- All statistics exercises you have completed throughout this module, including those from the mandatory worksheets in Units 8 and 9. **(Application of Knowledge weighted at 10%)**
- Your evaluation of your Literature Review and Research Proposal submissions. **(Independent working weighted at 10%)**
- Reflections on **(Criticality weighted at 40%)**:
    - your statistical analysis skills,
    - the research methods process based on your learning in this module,
    - the impact on your personal/professional experience based on your completed professional skills matrix and any associated SWOT Analysis and/or Action Plan.

The 1500-word count outside of your reflection piece:

- does NOT include the 1,000 words reflection, which is a separate output (although uploaded in the same place).
- does NOT include references, common parts, artefacts, spreadsheets, code snippets, figures etc.
- does NOT include tutor comments and feedback as they are not the student's original work.

It is expected that reflections will be written as you progress through the module, as listed above. The final reflective piece that you prepare, which might include components of the reflections that you have captured throughout the module is the piece which should be capped at 1,000 words.

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EXAMPLE: End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece

Item	Description
📁 **e-Portfolio**	A structured webpage (GitHub Pages or similar) with all your work from the module
📄 **Reflective Piece (1000 words)**	A critical reflection on your learning journey — this can be written or video format with subtitles and transcript
🔗 **Submit both**	Submit: 1) your reflection (PDF or Word doc) with the portfolio **web link in the header**, and 2) ensure your portfolio is complete and published

> Make it easy to navigate and visually clean

📁 Suggested Folder Structure:

```
css

📁 Home (Intro to portfolio)
├── 📄 Reflective Activities
├── 📊 Statistics Exercises
├── 📚 Literature Review & Proposal
├── 📈 Skills Matrix / SWOT
├── 🎥 Reflection (Video or written)
```

✅ **Checklist:**

- ☐ 1000-word reflective piece: written or video with transcript
- ☐ e-Portfolio complete and published
- ☐ Clear structure and navigation
- ☐ Accurate citations and Harvard references
- ☐ Reflection uploaded as Word/PDF with portfolio URL in the header
- ☐ Run through Turnitin for originality
- ☐ No word count issues (+10% rule)

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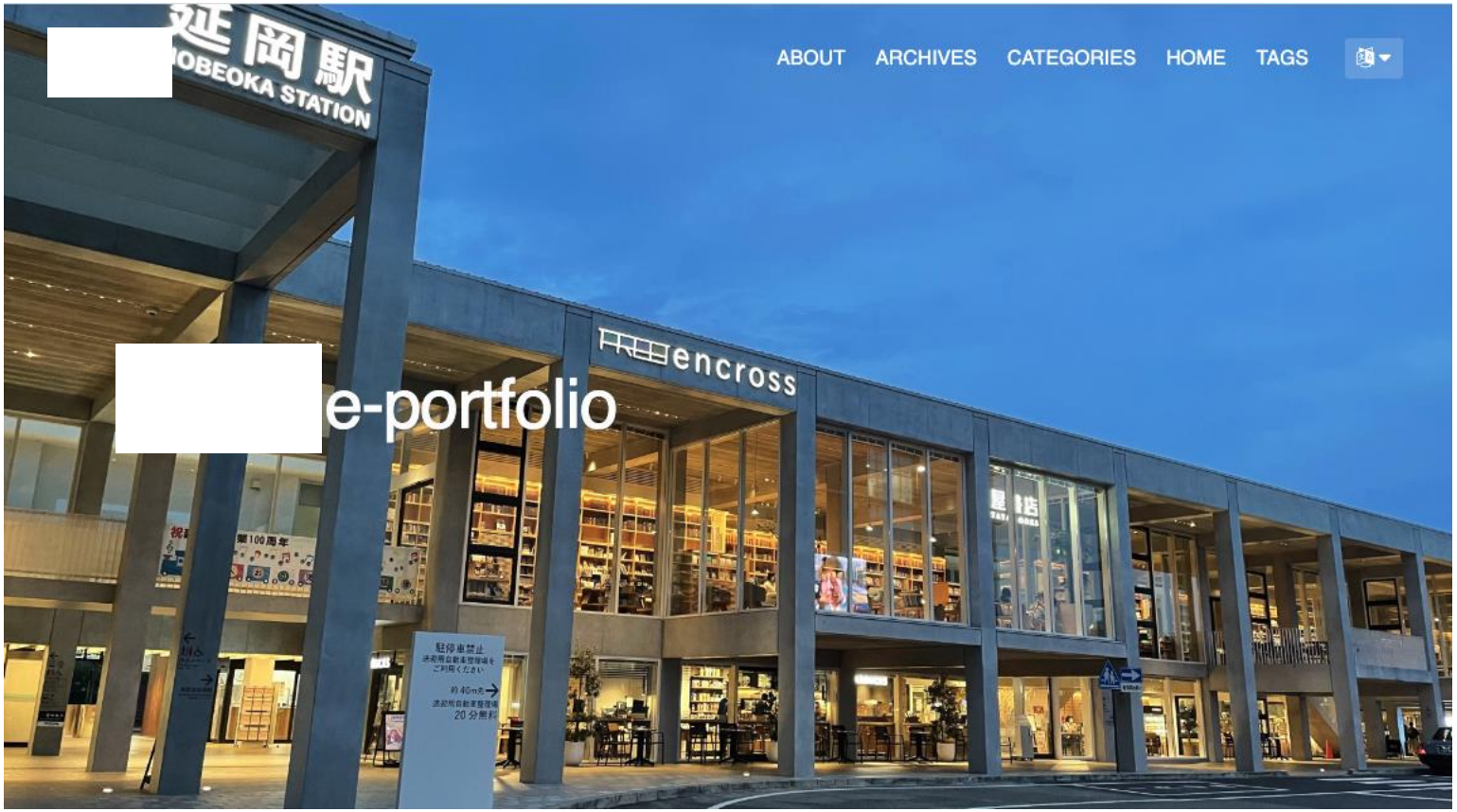
EXAMPLE: End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece



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EXAMPLE: End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece

Light Dar

Research_method

Research_method_e-portfolio

Apr 01, 2025 | About 10 mins

#data science

Learning Artifacts and Contributions to Projects

unit5

Case Study 1: Cambridge Analytica (Confessorem, 2018, Kleinman, 2018)

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EXAMPLE: End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece

E: 7.1, 7.3 7.4

1 Data Overview Data Set G: Data of impurities when processed with Agent1 and 2.

2 Test Procedure This time, we will use a one-sided test to check whether Agent1 can remove impurities more effectively.

・Null hypothesis (H_0): $\mu_1 \geq \mu_2$ (Agent 1 has the same performance as Agent2 or less)

・Alternati $< \mu_2$ (Agent1 is significantly more effective)

Check the homogeneity of variance using F-tests and perform t-tests 3 Results and interpretation

F-test: Test of variance using two samples

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EXAMPLE: End of Module Assignment - Individual e-Portfolio including 1000 word reflective piece

I selected two papers on image classification:

	Image Classification with Classic & Deep Learning Techniques	A Survey on Semi- Self- and Unsupervised Learning for Image Classification
Source	Lorente et al. (2021)	Schmarje et al. (2021)
Type	Experimental study	Survey
Purpose	To compare various kinds of image classifier	To "compare 34 methods in detail based on their performance"
Problem	Determining the most effective method under different circumstances	Scarcity of labeled data in training high-performing classifiers
Objective	To assess the performance of these techniques "in terms of accuracy and loss"	To identify trends, categorize existing approaches, and highlight future research directions
Contribution	Offering insights for researchers and practitioners in choosing suitable classifiers	Making it easier for new researchers to understand the field's progress and open challenges
Appropriateness of research methodology	It directly tests different classification techniques on benchmark datasets, enabling objective comparisons	A survey-based approach is appropriate since the goal is to provide a broad synthesis rather than conduct original experiments
Appropriateness of data collection and analysis	Uses widely accepted datasets and performance metrics	Based on reviewing past studies rather than conducting new experiments
Support for claims and conclusions	Includes "accuracy and loss" comparisons to justify its claims but significance testing could strengthen its conclusions	Relies on external studies to support its claims
Enhancements	I would test on more datasets to confirm accuracy, and change some parameters to ensure the model is optimised	Perhaps include a side-by-side comparison of methodologies, and talk more about potential biases

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Main e-portfolio and formative activities

Unit(s)	Component	Deadline	e-Portfolio/Formative
1 - 3	Collaborative Discussion 1	End of unit 3	e-Portfolio
1	Reasoning Quiz	End of unit 1	Formative
1	Reflective Activity 1: Ethics in Computing	End of unit 1	e-Portfolio/Formative
2	e-Portfolio Activity: Literature Review and Research Proposal Outlines	End of unit 4	e-Portfolio/Formative
3	e-Portfolio Activity: Research Proposal Review	End of unit 3	e-Portfolio/Formative
3	Seminar 2: Peer Review Activity	End of unit 3	Formative
4	Seminar 3: Case Study on Privacy	End of unit 4	Formative
4	Literature Review Outline Submission	End of unit 4	Formative
5	Reflective Activity 2: Case Study: Inappropriate Use of Surveys	End of unit 5	Formative
5	Wiki Activity: Questionnaires	End of unit 5	Formative
7 - 9	Collaborative Discussion 2: Case Study on Accuracy of Information	End of unit 9	e-Portfolio
7	Seminar 4: Inferential Statistics Workshop and Statistics Worksheet	End of unit 7	Formative/e-Portfolio (worksheets)
8 - 9	Statistical Worksheet Submissions	End of unit 10	e-Portfolio (compulsory)
9	e-Portfolio Activity: Charts Example Worksheet	End of unit 9	e-Portfolio/Formative
11	Seminar 6: e-Portfolio Preparation	End of unit 11	e-Portfolio/Formative
12	Self Test Quiz	End of unit 12	Formative

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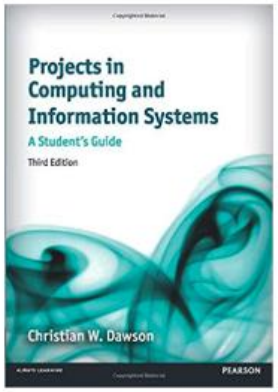
eBooks



Access My eBook

Projects in Computing and Information Systems: A Students Guide

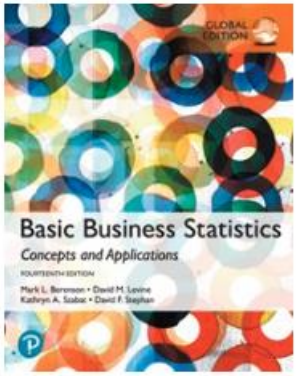
Edition: 3rd

Author(s): Dawson, C.

Date of Publication: 2015

Publisher: Pearson

Place of Publication: Harlow



Access My eBook

Basic Business Statistics: Concepts and Applications

Edition: 14th

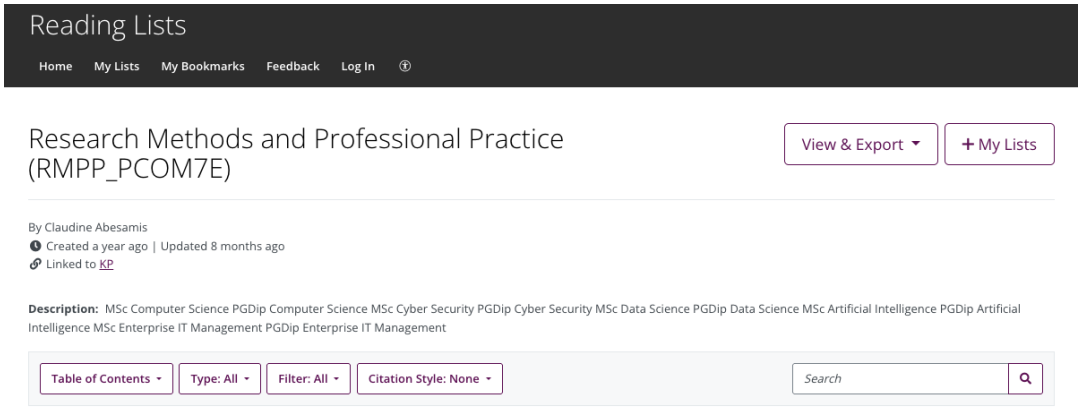
Author(s): Berenson, L., Levine, D., Szabat, K. & Stephan, D.F.

Date of Publication: 2020

Publisher: Pearson

Place of Publication: Harlow

Access via the University of Essex Library.



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Thank you

Any questions?

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