



Human Performance

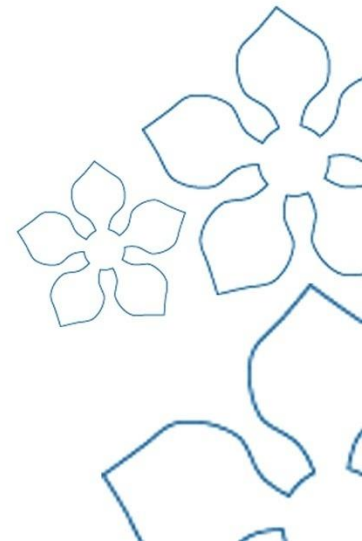
M6X00915

Resit Exam Revision Focus

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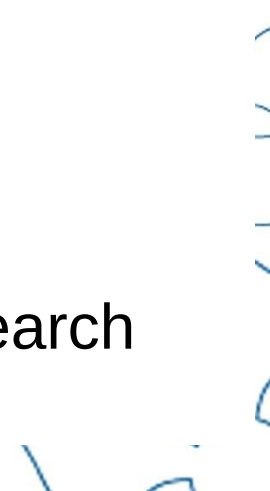


Exam Information

- Exam is worth 50% of the overall **module** mark.
- Answer **TWO** essay style questions from a choice of **six** questions: each worth 50% of overall **exam** mark.
- Questions based on lecture topics **BUT YOU** need to have completed additional reading and include relevant studies to support your arguments.
- Exam questions will be structured so that you will be required to:
 - **Critically discuss or Critically evaluate**



Exam guidance

- Take your time
 - Read through all the questions fully.
 - Think about topic area
 - Can you link in information
 - Take time planning structure of your answer
 - Be precise and clear.
 - **Always use empirical evidence**
 - Examine alternative viewpoints fairly.
 - Use the best evidence.
 - Link pieces of research together.
 - Include information on theories and models.
 - Include information from applied and experimental research
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Exam guidance

Regardless of the questions you answer, your mark will depend on the type of answer you provide

Strong Answers

Provide good description of theory/model or topic in question.

Explain the meaning of any specific terms.

Goes beyond the lecture notes and shows evidence of wider reading.

Include empirical evidence and discuss the studies mentioned.

Provide relevant integration, critical analysis and evaluation of arguments.

Identify strengths and weaknesses associated with each theory based on relevant studies and would clearly explain what the findings mean for theory.

Consider thoughts on wider implications.



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Module Coverage

Lecture	Seminar
Introduction and Overview	No seminar: preparatory reading
Cognitive Modelling and Information-processing	Computational Modelling
Artificial Intelligence	Essay assignment guidance
Signal Detection	Applications of Signal Detection Theory
Vigilance/Attention and performance	The architecture of attention
Models of Memory and real-world application	Considerations for Eye-Witness Testimony
Expert Memory, Learning, and Considerations for Education	Skilled Performance and Expertise
Ageing and Performance	The credibility of “use it or lose it”
Human Error	Can We Reduce Human Error in the Workplace?
Stress and Performance	Exam Preparation and Guidance

Module Coverage

- On the following slides are areas for revision focus.
- They are not questions.....
 - Instead they are general areas where you should be focusing your reading and revision.
 - The questions will ask something specific in relation to these broad areas.
 - Therefore, you must prepare thoroughly for the exam and be capable of tailoring your answer to the specifics of the question.



Artificial Intelligence

- Background: simulation of human mind by machine
 - Descartes: Automata, Babbage: Difference engine
 - Turin Test – Imagination game
 - Newell and Simon: Logic theorist
 - ELIZA & SHRDLU programmes, Deep blue & robotics
 - Philosophical arguments: Strong vs. Weak AI
 - Practical arguments & criticisms
 - Comparison of Brains and computers
 - Searle – “Chinese Room argument”
 - Embodied cognition
 - What it means to be conscious
 - **Key paper on Moodle: AI in psychological practice (Luxton, 2014)**
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Stress

- Cognitive Models of stress
 - **Transactional model** (Lazarus & Folkman, 1984)
 - Evaluation through cognitive appraisal
 - Result of transaction between person and situation
 - Primary and secondary appraisals
 - Coping mechanisms to reduce negative emotions
 - Appraisal components, core relational theme and the proposed adaptive function of modelled emotions (Smith & Lazarus, 1990)
 - Explanation of outcomes in real-world performance
 - Effects on inhibition, skills, concentration, etc.
 - Other models to explain stress also exist.
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Vigilance

- Measured through SDT
- Theories of vigilance:
 - Inhibition, Arousal, Habituation, Filter, Resource, Sustained-demand, and Expectancy
 - Research to support/contradict these theories
 - Evaluation of the above theories
- Techniques for combating loss of vigilance
 - Increase sensitivity: show target examples, introduce false signals, increase target saliency, reduce event rate, training
 - Shift response criterion: Instruction, knowledge, false signals, confidence, & many others.

Consideration for Education

- Learning and Expertise
 - Memory strategies and exams: McDougall & Gruneberg (2002)
 - Techniques for revision
 - Spacing effects: Baddeley & Longman (1978)
 - Rote learning vs. expanded retrieval
 - The name game + research by Morris & Fritz (2000)
 - Self-testing effect: Roediger & Karpicke (2006)
 - Selective revision: Macrae & MacLeod (1999)
 - Potential for retrieval-induced forgetting
 - What do to if RIF occurs in an exam
- Papers on Moodle: Bartoszewski et al. (2015); Roediger & Pyc (2012)

Human Error

- Relationship between individual differences and human error
 - Personality
 - Error/accident proneness
 - Personality & Air Pilot Crashes (Lardent, 1991) - no evidence for "grand theory"/generic personality profile for accident prone fighter pilots but suggested support for "limited domain" theories of accident proneness.
 - Mood
 - Personality factors & mood as predictors of detection accuracy (Schell et al., 2005) - traits more predictive of hit rates in quality control task (pharmacy checking) than state measures such as mood and workload
 - Visser et al's. (2007) Meta Analysis paper



Expertise

- Skilled performance
- Theories of skill acquisition
 - **Anderson's Adaptive Control of Thought ACT* (1982, 1983, 1995)**
 - Knowledge compilation, tuning
 - Modelling skill acquisition: Then → If rules
 - Resembles stimulus-response learning
 - Link to working memory
- Becoming an expert:
 - Evidence from studies on chess players (Chase & Simon, 1973; Gobet & Simon, 2000)
 - Becoming an expert: Evidence from studies on typists (Salthouse, 1986, Yamaguchi & Logan, 2014).

Exam Questioning

- In the exam, a question is not just going to ask you to describe these aspects.
- At level 6 you will be required to critically evaluate or critically discuss a particular topic in relation to these aspects of performance.
- So, just as an example, if you saw a question in relation to SDT in the exam, only describing what SDT is, will **not** do well (it would be lucky to get 40).
- Of course some description is needed but marks come from specifically answering the exam question and providing relevant critical evaluation.

Note...

- Do not restrict yourselves into thinking that one exam question will only relate to one particular lecture.
- Exam questions may be answered with the encompassment of information from multiple lectures **and seminars** from the whole module series.



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ESSENTIAL READING!!!

- Wickens, C. D., Hollands, S. B., & Parasuraman, R. (2013). *Engineering Psychology and Human Performance*. Pearson.
 - Matthews G., Davies, D .B., Westerman, S J., & Stammers, R. B. (2000). *Human Performance: Cognition, stress and individual differences*. Hove: Psychology Press.
 - Smith, T. J., Henning, R. A., Wade, M. G., & Fisher, T. (2014). *Variability in human performance*. CRC Press. (Available as a library e-book).
 - Esgate et al. (2005). *An introduction to applied cognitive psychology*. Psychology Press. (Available as e-book).
 - Craik, F. I., & Salthouse, T. A. (Eds.). (2011). *The handbook of aging and cognition*. Psychology Press.
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ESSENTIAL READING!!!

- Look up citations from the lecture slides:
 - If a particular citation is not in the core textbooks, then you can use the library search to find the particular journal article or google scholar.
- At the end of some lectures there may also be suggestions for further reading.
- Read the papers provided on Moodle and the papers provided for the seminars – trust me, these will be useful!!!!



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And Finally...

ALL THE BEST FOR THE EXAM!!!



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