

WM948-15 Emerging Technologies for Business

24/25

Department

WMG

Level

Taught Postgraduate Level

Module leader

Armaghan Khan

Credit value

15

Module duration

4 weeks

Assessment

100% coursework

Study locations

University of Warwick main campus, Coventry Primary

Distance or Online Delivery

Description

Introductory description

This module aims to address the ever-changing sphere of technology and show how emerging technologies can be applied to different industries and business contexts. The module will offer crucial, advanced theoretical and practical technological foundations to participants. It is clear that there is a need to disseminate this knowledge to students to better help them understand technology and how it aligns with specific business use cases across various different functions such as Finance, Sales, and Operations etc

The development and understanding of technological step changes can provide significant advantages to organisations and give them an edge over competitors. Comprehensive knowledge of the limitations and current boundaries of technology enables strong forecasting and synergises with strategic thinking.

Module aims

This module provides an advanced and comprehensive look at current and future technological trends. It explores how current market leaders use technology to their advantage by providing a

broad understanding of computing methods and infrastructures, cutting edge materials, and applications such as artificial intelligence by forming an in-depth knowledge of what is currently possible and preparing students for technological change. This module will equip the student with the right skills to both explore new technologies, and explore their potential exploitations.

In particular, this module will consider the emerging technology landscape covering technologies such as: Generative Artificial Intelligence, Edge/Quantum Computing, Extended Reality, Data Visualisation, Robotic Process Automation, Blockchain and Cyber Security. We will seek to engage with WMG researchers such as those working in new materials, automation and robotics to incorporate the latest work in these fields.

In addition to introducing students to the technologies themselves, the module aims to enable participants to recognise the opportunities and challenges that emerging technologies may bring, and identify use-cases and industries that could face disruption from new technologies.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

- Emerging Technology Theories
- High Performance Computing – Edge & Quantum
- Big Data Technology
- Generative AI & Machine Learning
- Industry 4.0
- Robotic Process Automation
- Augmented/Virtual & Extended Reality
- 3D & 4D Printing
- Blockchain
- Industry based technology application & Research

Learning outcomes

By the end of the module, students should be able to:

- Demonstrate the ability to work in a group and develop a use case appropriate technology implementation road map using key learnings from the module.
- Critically analyse and assess various emerging technologies to gauge their potential for reshaping different business functions and enabling innovation.
- Critically review the theoretical frameworks associated with emerging technologies and discuss their relevance in defining the inception to widespread adoption lifecycle of cutting edge technology.
- Evaluate the transformative potential of emerging technologies to impact industry dynamics in the long-term horizon.
- Critically analyse the impact of technology implementation on function specific applications and the wider organizational context.

Indicative reading list

Schwab (2017) - The Forth Industrial Revolution. Portfolio Penguin; 1st edition. ISBN-13 : 978-0241300756

Anderson R (2008). Security Engineering: A Guide to Building Dependable Distributed Systems, 2nd Edition. Hoboken, NJ: John Wiley & Sons. ISBN-13: 978-0470068526

Birch D (2017). Before Babylon, Beyond Bitcoin: From Money that We Understand to Money that Understands Us. London: London Publishing Partnership.

Floyd TL (2013). Digital Fundamentals, 10th Edition. London: Pearson. ISBN-13: 978-0132359238.

Gilchrist A (2016). Industry 4.0: The Industrial Internet of Things. New York, NY: Apress. ISBN-13: 978-1484220467.

Hennig, N (2017), Keeping Up with Emerging Technologies: Best Practices for Information Professionals. Libraries Unlimited. ISBN-13: 978-1440854408

Kavis MJ (2014). Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS). Hoboken, NJ: John Wiley & Sons. ISBN-13: 978-1118617618

Kim G, Behr K and Spafford G (2013). The Phoenix Project: A Novel about It, Devops, and Helping Your Business Win. IT Revolution Press. ISBN-13: 978-0988262591

Mayer-Schönberger V and Cukier K (2013). Big Data – A Revolution That Will Transform How We Live, Think and Work. London: John Murray. ISBN-13: 978-184854790

Tanenbaum AS and Van Steen M (2006). Distributed Systems: Principles and Paradigms, 2nd Edition. London: Pearson. ISBN-13: 978-1530281756

Ross (2016) - The Industries of the future. Simon & Schuster UK; 1st edition. ISBN-13 : 978-1471135262

Kumar, Tomar & Sharmila (2021) -Emerging Technologies in Computing: Theory, Practice & Advances. Chapman and Hall/CRC; 1st edition. ISBN-13 : 978-0367633646

[View reading list on Talis Aspire](#)

International

Technology implementation transcends boundaries and tech innovation is driven from various parts of the world and therefore can take precedence from a range of different geographies. Therefore the study of emerging tech is very relevant in the international context.

Subject specific skills

Digital transformation, Data Visualization, Emerging Tech Theory, Blockchain, 3D & 4D Printing, IIoT, Crowdsourcing, Cloud, Generative AI, Quantum Computing and Cyber Security.

Transferable skills

Technology analysis, Technology Implementation, Opportunity Analysis, Virtual teams and Team working.

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	10 sessions of 1 hour (7%)
Online learning (independent)	60 sessions of 1 hour (40%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

No private study requirements defined for this module.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A5

	Weighting	Study time
Business Report	70%	42 hours
The students will be writing a business report focused towards a specified industry as a market research entity. The report will focus on discussing industry construct and technologies that shape the existing landscape. It will then dwell into ideas around certain emerging technologies and their potential to disrupt the said industry. Towards the end of the report, the students will be taking a long term approach to tech growth and its implication on various industry applications while touching upon ideas of innovation and disruption.		
Impacts of Emerging Technology on Business Processes & Functions - Presentation	30%	18 hours

Students will be working in specific business functions aiming to leverage emerging technologies for redesigning processes and applications while also looking at the broader organizational context to assess how value can be driven beyond specific functions. Peer review assessment methodology will be implemented in this assessment. Students will be tasked with doing a reflective piece in no more than 750 words and hold a 5% weightage. This reflective piece will be delivered individually by every student outside of the group presentation. The students will work on the reflective piece during the second half of week 4. The IMA is released at the end of week 3

Weighting

Study time

and IMA presentations are held during the second session of Week 4. Students will be submitting the reflective piece of work after their presentations on Friday, Week 4 no later than 5pm.

Feedback on assessment

In module work will have feedback provided verbally after assessment. For Essay based Business Report assignment, individual notes and bespoke feedback attributed to each script returned to each student.

Availability

Anti-requisite modules

If you take this module, you cannot also take:

- WM955-10 Emerging Digital Technologies

Courses

This module is Optional for:

- Year 1 of TWMS-H1S9 Postgraduate Taught Management for Business Excellence (Full-time)
- Year 1 of TWMS-H1S4 Postgraduate Taught e-Business Management (Full-time)