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Breaking down barriers: Making the curriculum more inclusive. Our commitment to inclusivity - A case study of reading lists for computing and engineering at UWL Library

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**OUR COMMITMENT TO INCLUSIVITY: A CASE STUDY OF  
READING LISTS FOR COMPUTING AND ENGINEERING AT UWL  
LIBRARY**

**Edyta Krol**  
**Subject Librarian**  
**School of Computing and Engineering**  
**University of West London**

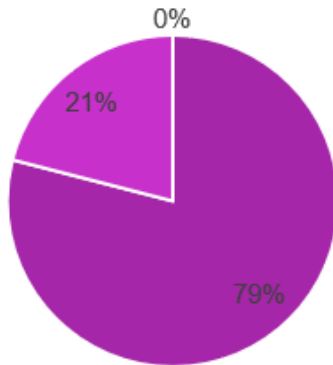
## *Where did I start?*

- Library Strategy 2018-2023
- UWL Access and Participation Plan 2021-2025
- WinSTEM – Reading List created for that group

# SCE student profile

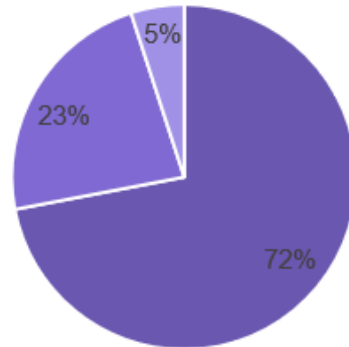
Undergraduate - 2470  
Postgraduate - 763

Gender



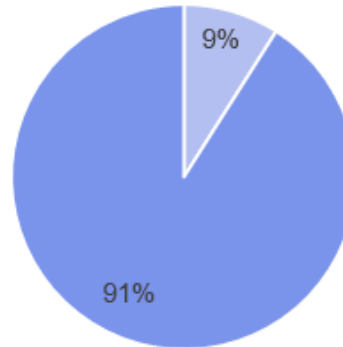
- Male
- Female
- Other

Ethnic group



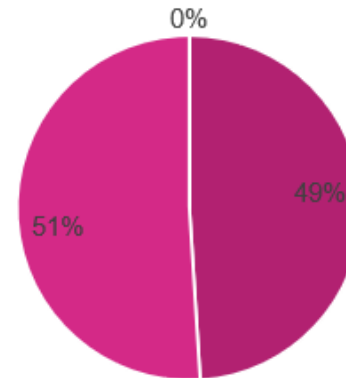
- BAME
- Non BAME
- Unknown

Disability



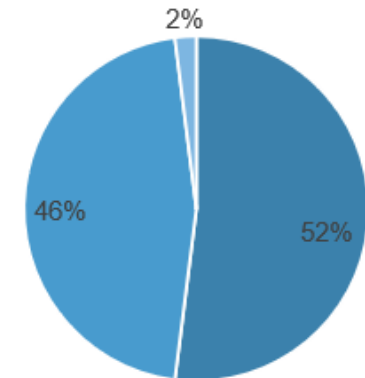
- Disability
- Not known disability

Age of entry



- Mature
- Young
- Unknown

IMD Group



- Quintiles 1-2
- Quintiles 3-5
- Unknown

## Criteria used to decide RL's inclusivity (AY 22-23)

### Very High

Main essential item is inclusive (where there is one key item for the module)

**AND/OR**

50% or more of essential items are inclusive

**AND/OR**

More than 70% of essential and recommended items combined are inclusive. One item has to be an essential (if there are any essential reading)

### High

At least one essential item on the list is inclusive (2 or more if list has more than 5 essential items)

**AND/OR**

50% or more of essential and recommended items combined are inclusive

### Medium

50% or more of recommended items are inclusive

**AND/OR**

One essential item is inclusive for lists where there is more than 5 essential item

### N/A

Conclusion cannot be made

# Methodology

- Criteria used to decide RL's inclusivity
- Only books, chapters and articles checked
- Only 1<sup>st</sup> author checked
- 34 RLs for 1<sup>st</sup> year and 35 RLs for 3<sup>rd</sup> year checked
- For dimensions used:
  - Ethnicity
  - Gender
  - Geographical/institutional affiliation
  - Content
- Google searches using author name or book/article title
- Publishers, universities, professional organisations, trade websites
- You Tube
- Profiles
- Images

# *L4 (1<sup>st</sup> year) and L6 (3<sup>rd</sup> year) RLs audit (engineering)*

## **Findings:**

- 24% of books and articles on the lists were written by BAME, female authors or their content was inclusive
- Unable to verify inclusivity in relation to author for 23% of books and articles
- 90% of the authors listed were male, compared to 4% females
- 8% of publications were published by UK Government or professional organisations such as: RIBA, CIOB, RICS

# Findings

## Level 4 (1<sup>st</sup> year) – 34 RLs

Individual Titles	Inclusive (author or content)	No information	White male/s	GOV/Industry procedures
119	24 (20.2%)	33 (27.7%)	60 (50.4%)	2 (1.7%)

## Level 6 (3<sup>rd</sup> year) – 35 RLs

Individual Titles	Inclusive (author or content)	No information	White male/s	GOV/Industry procedures
248	64 (25.8%)	51 (20.6%)	107 (43.1%)	26 (10.5%)

Inclusivity	1 <sup>st</sup> year	3 <sup>rd</sup> year
Very high	11.8%	41.2%
High	23.5%	23.5%
Medium	11.8%	2.9%
Low	14.7%	17.7%
N/A	38.2%	14.7%



# *Barriers to increase inclusive RLS*

## Feedback from academics:

- Time constraints
- Not sure what to do
- Don't understand what an inclusive item is
- Limited availability of resources
- Resistance to change

# SCE Inclusive Reading

Edit ▾

View & Export ▾

+ My Lists

2023-2024 ACADEMIC YEAR

Created 5 months ago | Updated 14 days ago

Table of Contents ▾

Type: All ▾

Filter: All ▾

Citation Style: None ▾

Search



[Artificial Intelligence Inclusive Reading](#)

[Built Environment Inclusive Reading](#)

[Computer Sciences Inclusive Reading](#)

[Diversity and inclusion in STEM - general](#)

[Electrical Engineering Inclusive Reading](#)

[Mathematics - Inclusive Reading](#)

[Sound Engineering Inclusive Reading](#)

[Women in STEM](#)

Reading



, and diversity in AI

VIEW AVAILABILITY



Importance not set ▾

ew of technology trends and their impact on our society, Artificial Era contributes to the current debate about the consequences of tech-  
different viewpoints and statistics on the use of robots worldwide, productivity, and job displacement, Gissel Velarde identifies the partic-  
sity in AI communities - and how that can exacerbate representation issues in employment, civil rights, gender, and education if no ac-  
tions are taken.



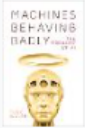
**Is artificial intelligence racist?: the ethics of AI and the future of humanity**

Book - by Arshin Adib-Moghaddam - 2023 - Importance not set ▾

VIEW ONLINE



How did racism creep into the algorithms that govern our daily lives, from banking and shopping, to job applications? Connecting the legacy of enlightenment racism to forms of discrimination in modern day algorithms and Artificial Intelligence, this volume examines what data feeds into AI technology - and how this data will shape the future of humanity. Delving into the narratives enveloping the development of AI systems, with a particular emphasis on "tech-giants" and the ideas of Mark Zuckerberg, Elon Musk and Bill Gates, Arshin Adib-Moghaddam explains how and why technology aids and abets various forms of extremism, entrenches social hierarchies and discriminatory boundaries and how this will impact international security and human rights in the future.



**Machines behaving badly: the morality of AI**

Book - by Toby Walsh; Toby Walsh - 2022 - Importance not set ▾

VIEW ONLINE



Artificial intelligence is an essential part of our lives - for better or worse. It can be used to influence what we buy, who gets shortlisted for a job and even how we vote.

## Inclusive Reading – SCE Reading List Guidelines for Module teams

The purpose of this guideline for academic staff was to suggest ways to introduce perspectives and experiences from traditionally excluded groups into reading lists.

More inclusive reading can increase engagement and improve student outcome, especially in students from those groups.

Such perspectives and experiences can be from many kinds of communities: ethnic, cultural, of gender, sexuality or other forms of identity.

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# Checklist



Have you considered different types of resources and searched for relevant videos, podcasts, TV Programmes (Box of Broadcasts), newspaper and journal articles?



Essential texts: Have you considered, added additional viewpoints and contexts for the broad themes of the module?



Recommended texts: Have you added a range of texts which look at the module's minor/contextual themes as additional perspectives?



Have you consulted colleagues and students (including the Student Union)?



Have you discussed purchasing possibilities with the librarian?

# Solutions (example)

Before:

TC60061E: Dynamical Systems

2023-2024 ACADEMIC YEAR Created 6 months ago | Updated 6 months ago | Linked to TC60061E

Table of Contents Type: All Filter: All Citation Style: None Search

Co-create the library  
We're actively diversifying our Library collections. Perhaps you have read something great that we ought to have in our collection? Perhaps there is a book you want to read that we don't have? Collaborate with us to find more inclusive titles in the Library.

Co-create the Library  
Webpage - Importance not set - VIEW ONLINE

Essential Texts

Introduction to dynamics  
Book - by Ian Percival; Derek Richards - 1982 - Essential reading - VIEW AVAILABILITY

Dynamical systems: differential equations, maps and chaotic behaviour  
Book - by D. K. Arrowsmith; C. M. Place - 2017 - Essential reading - VIEW ONLINE

After:

TC60061E: Dynamical Systems

2023-2024 ACADEMIC YEAR Created 6 months ago | Updated 3 hours ago | Linked to TC60061E

Table of Contents Type: All Filter: All Citation Style: None Search

Co-create the library  
We're actively diversifying our Library collections. Perhaps you have read something great that we ought to have in our collection? Perhaps there is a book you want to read that we don't have? Collaborate with us to find more inclusive titles in the Library.

Co-create the Library  
Webpage - Importance not set - VIEW ONLINE

Essential Texts

Introduction to dynamics  
Book - by Ian Percival; Derek Richards - 1982 - Essential reading - VIEW AVAILABILITY

Dynamical systems: differential equations, maps and chaotic behaviour  
Book - by D. K. Arrowsmith; C. M. Place - 2017 - Essential reading - VIEW ONLINE

Mathematical Modelling - Dynamical Systems and Stability Analysis - YouTube  
Audio-visual document - by Nair Realm - Essential reading - VIEW ONLINE

Is Maths The Greatest Subject In The World? IFLScience Podcast  
Audio-visual document - by Nira Chamberlain - Essential reading - VIEW ONLINE

The Hidden Heroines of Chaos  
Article - Essential reading - VIEW ONLINE  
Two women programmers played a pivotal role in the birth of chaos theory. Their previously untold story illustrates the changing status of computation in science.

Quanta Science Podcast  
Webpage - by Susan Valot - Essential reading - VIEW ONLINE




Climate, chaos and Covid: how mathematical models describe the universe  
Book - by C. J. Budd - 2022 - Essential reading - VIEW AVAILABILITY

### WinSTEM

2023-2024 ACADEMIC YEAR By Edyta Krol Created 5 months ago | Updated a month ago

A Reading List created for WinSTEM group at the School of Computing and Engineering

Table of Contents Type: All Filter: All Citation Style: None

- 
**WISE - Women into Science & Engineering**  
 Website - Importance not set  
 WISE enables and energises people in business, engineering and mathematics (STEM). WISE members inspire and support women in their companies. Their mission - gender parity in STEM.
- 
**WES - Women's Engineering Society**  
 Website - Importance not set  
 The Women's Engineering Society is a charity and a not-for-profit organisation. Working in partnership, we support women in engineering and technology to develop their careers and skills. We support companies with gender diversity and equality.
- 
**The UK STEM Education Landscape**  
 Webpage - May 2016 - Importance not set  
 A report for the Lloyd's Register Foundation from the UK STEM Education Landscape.



### Inclusive Research Methods

2023-2024 ACADEMIC YEAR Created 5 months ago | Updated 6 days ago

Table of Contents Type: All Filter: All Citation Style: None

**About the reading list**  
The inclusive research methods reading list links to a range of sources focused on research methods between researcher and participant. Inclusive research methodologies are used throughout - please use the table of contents to navigate.

**Definitive works**

- 
**Decolonizing methodologies: research and indigenous peoples**  
 Book - by Linda Tuhiwai Smith - 2021 - Third Edition - Recommended reading  
 3rd edition of the seminal text
- 
**Inclusive research: research methods**  
 Book - by Melanie Nind - 2021 - Recommended reading

### SCE Inclusive Reading

2023-2024 ACADEMIC YEAR Created 5 months ago | Updated 2 minutes ago

Table of Contents Type: All Filter: All Citation Style: None

Search

- [Artificial Intelligence Inclusive Reading](#)
- [Built Environment Inclusive Reading](#)
- [Computer Sciences Inclusive Reading](#)
- [Diversity and inclusion in STEM - general](#)
- [Electrical Engineering Inclusive Reading](#)
- [Mathematics - Inclusive Reading](#)
- [Sound Engineering Inclusive Reading](#)
- [Women in STEM](#)


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**and diversity in AI**  
Importance not set

VIEW AVAILABILITY

new of technology trends and their impact on our society, Artificial Era contributes to the current debate about the consequences of technology on different viewpoints and statistics on the use of robots worldwide, productivity, and job displacement, Gissel Velarde identifies the particularity in AI communities - and how that can exacerbate representation issues in employment, civil rights, gender, and education if no actions are taken.

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 **Is artificial intelligence racist?: the ethics of AI and the future of humanity**  
 Book - by Arshin Adib-Moghaddam - 2023 - Importance not set

VIEW ONLINE

How did racism creep into the algorithms that govern our daily lives, from banking and shopping, to job applications? Connecting the legacy of enlightenment racism to forms of discrimination in modern day algorithms and Artificial Intelligence, this volume examines what data feeds into AI technology - and how this data will shape the future of humanity. Delving into the narratives enveloping the development of AI systems, with a particular emphasis on "tech-giants" and the ideas of Mark Zuckerberg, Elon Musk and Bill Gates, Arshin Adib-Moghaddam explains how and why technology aids and abets various forms of extremism, entrenches social hierarchies and discriminatory boundaries and how this will impact international security and human rights in the future.

# *From strategy to practice*

L4 (1<sup>st</sup> year) and L6 (3<sup>rd</sup> year) Engineering RLs audit (October 2022)



SCE Inclusive Reading List Guidelines created (February 2023)



SCE Inclusive Reading List Group created (March 2023)



Presentation to all SCE members on the IRL Group work (May 2023)



Improved RLs

# Moving Forward - 2024

UWL Library Services guidelines for inclusive acquisitions: books and ebooks

- To be considered an inclusive acquisition, the book ought to fulfil at least one of the following:
- Authored by a person from a marginalised/underrepresented group (ability, care experience, displacement, ethnicity, gender sexuality, socioeconomic status)
- Authored by a person from a contextually underrepresented group (gender - the author identifies as a woman and writes in a field dominated by male writers )
- The content of the book (at least 50%) relates to a marginalised/underrepresented group (ability, age, appearance, care experience, colonialism, displacement, environment, ethnicity, gender, intolerance, mental health, religion, sexuality socioeconomic equality)

Reading list	Number of items	Criteria
Essential and recommended reading	Minimum 6 items	50% of essential items are inclusive
		<b>AND</b>
		50% of recommended items are inclusive
<b>OR</b>		
Recommended reading only	Minimum 6 items	At least 50% of items are inclusive



***Thank you!***