Education Reforms at NUS

December 2023

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Education Reforms – Key Impetus

**INDUSTRY 1.0**
Mechanization, steam power, weaving loom

**INDUSTRY 2.0**
Mass production, assembly line, electrical energy

**INDUSTRY 3.0**
Automation, computers and electronics

**INDUSTRY 4.0**
Cyber Physical Systems, internet of things, networks

1784  1870  1969  TODAY
Education Reforms – Key Directions

Objective
Develop future-ready graduates through an innovative education model

Impetus
Graduates will have a longer working life in a complex and turbulent working environment

Expanding lifelong learning
• 20-year lifecycle
• Modular, stackable courses
• SkillsFuture

Strong foundation for lifelong learning
• Solid common curriculum
• Greater versatility

Interdisciplinary education
• Connections, lateral thinking, multiple sources of knowledge and multiple approaches

Student-centric education
• Flexibility and choice
• Self-directed learning

Rich, diverse learning pathways
• Double degree, double major, major-minor programs
• Interdisciplinary programs
• 40% trained in more than one discipline

Enhance employment outcomes
• 21st century skills
• Multiple competencies
Educational Reforms – Key Initiatives

1. General Education
2. Humanities and Sciences
3. Design and Engineering
4. Law
5. Health Sciences
6. Computing
7. Business
8. NUS College
General Education – Six Pillars

- **Broad-based intelligences** for academic and career pursuits
- **21st century skills** for academic and career pursuits

**Cultures & Connections**
- Global citizenry
- Adaptability to cultural contexts and environments

**Critique & Expression**
- Thoughtful critique
- Communication of ideas
- Listening skills

**Singapore Studies**
- Understanding of Singapore
- Historical, economic, societal, and cultural context

**Data Literacy**
- Quantitative reasoning
- Numerical sense-making

**Digital Literacy**
- Computational thinking
- Artificial intelligence

**Communities & Engagement**
- Service learning
- Engagement in broader societal issues
Humanities and Sciences – Curriculum

- **Common college requirements** to build strong foundation
- **Compact major requirements** to allow essential disciplinary education
- **Expanded unrestricted electives** to facilitate choice
Humanities and Sciences – Requirements

- Integrated Humanities
- Integrated Social Sciences
- Integrated Asian Studies
- Scientific Inquiry I
- Scientific Inquiry II
- Inter-disciplinary Course I
- Inter-disciplinary Course II
- 5 Integrated Courses
- 2 Inter-disciplinary Courses
- 6 Common Core Courses

- Data Literacy
- Digital Literacy
- Communities and Engagement
  - Artificial Intelligence
  - Design Thinking
  - Writing
- Integrated Humanities
- Integrated Social Sciences
- Communities and Engagement
- Digital Literacy
- Data Literacy
Design and Engineering – Curriculum

• **Common college requirements** to build strong foundation
• **Compact major requirements** to allow essential disciplinary education
• **Expanded unrestricted electives** to facilitate choice

![Diagram of Design and Engineering Curriculum]

- **Unrestricted Electives** (10 courses)
- **University Requirements** (6 courses)
- **Common Requirements** (9 courses)
- **Major Requirements** (15 courses)
## Design and Engineering – Requirements

<table>
<thead>
<tr>
<th>Design Thinking</th>
<th>Maker Space</th>
<th>Systems Thinking</th>
<th>Artificial Intelligence</th>
<th>Integrated Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Futures</td>
<td>Communities &amp; Engagement</td>
<td>Creating Narratives</td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>Singapore Studies</td>
<td>Cultures &amp; Connections</td>
<td>Critique and Expression</td>
<td>Digital Literacy</td>
<td>Data Literacy</td>
</tr>
</tbody>
</table>
Law – Changing Environment

**Today**
- **Pyramid structure**
  - Partner
  - Senior
  - Junior
  - High ratio of junior lawyers per partner
  - Junior lawyer level most impacted by outsourcing and automation

**Tomorrow**
- **Rocket structure + nonlawyer**
  - Cooperations
  - Outsourcing partner
  - Project manager
  - Tech solutions
  - Paralegals
  - Legal tech
  - Low ratio of junior lawyers per partner
  - Especially entry-level jobs will vanish

**Source:** BCG analysis
Law – Key Initiatives

- Attract first year STEM students into Law
- Incorporate data literacy and digital literacy in Law degree
- Offer Law double degrees and concurrent degrees
- Offer Law graduate degree (JD) to working professionals
- Allow Law students to do second major or minor
Health Sciences – Changing Environment

Confront an ageing population
- Manage many people with chronic conditions
- Manage many people with mobility challenges

Emphasize preventive over remedial healthcare
- Reduce burden on healthcare system
- Promote productive longevity

Facilitate ageing in place
- Build community care facilities and clinics
- Leverage on telemedicine and wearables
Health Sciences – Common Curriculum

Medicine, Dentistry, Nursing, and Pharmacy

Social and Behavioural Determinants of Health

Communications and Teamwork in Healthcare

Ethics, Law, and Professionalism in Healthcare

Data Literacy

Digital Literacy
Computing – Curriculum

Cultures & Connections

Critique & Expression

Data Literacy

Digital Literacy

Singapore Studies

Computing Ethics (1 course)

Inter-disciplinary Exposure (3 courses)

Major (20 courses)

Unrestricted Electives (10 courses)

Communities & Engagement

Computing Ethics

Inter-disciplinary Exposure

Major

Unrestricted Electives
Business – Curriculum

- Cultures & Connections
- Critique & Expression
- Data Literacy
- Digital Literacy
- Singapore Studies
- Communities & Engagement

Business Environment (5 courses)
Field Service Project (1 course)
Major (15 to 17 courses)
Unrestricted Electives (10 courses)
NUS College – Common Curriculum

Critical Competencies (4 courses)

Global Orientation (3 courses)

Making Connections (6 courses)

Impact Experience (1 course)
Students choose what to stack.

College or Faculty Requirements

Unrestricted Electives

Major

Second Major

Unrestricted Electives

Minor 1

Minor 2

University Requirements

College or Faculty Requirements

University Requirements

College or Faculty Requirements

College or Faculty Requirements

College or Faculty Requirements

Major

Major

Major

Major

Major

Curriculum Structure – Multiple Pathways

160 credits

Single Major

Double Major

Major Minor