

**CURRICULUM FOR BACHELOR OF ENGINEERING (ELECTRICAL & ELECTRONIC)  
WITH CN YANG SCHOLARS PROGRAMME  
SECOND MAJOR IN DATA ANALYTICS (EEDA)  
(FIRST YEAR ADMISSION)  
AY2025 Intake Onwards**

| SUMMARY OF ACADEMIC UNIT REQUIREMENT |                    |            |           |                                      |                          |                    |           |                 |
|--------------------------------------|--------------------|------------|-----------|--------------------------------------|--------------------------|--------------------|-----------|-----------------|
| Year of Study                        | Major Requirements |            |           | Interdisciplinary Collaborative Core |                          |                    | BDE       | Total AU        |
|                                      | School Core        | CNYSP-Core | MPE       | CC                                   | Professional Series (PS) | Care, Serve, Learn |           |                 |
| 1                                    | 9 [3]              | 23         | 0         | 2                                    | 3                        | 0                  | 0         | 37 [3]          |
| 2                                    | 18 [6]             | 6          | 0         | 8                                    | 0                        | 3                  | 7         | 42 [6]          |
| 3                                    | 14 [3]             | 0          | 9         | 0                                    | 6                        | 0                  | 12        | 41 [3]          |
| 4                                    | 8                  | 0          | 12        | 0                                    | 0                        | 0                  | 3         | 23              |
| <b>Total</b>                         | <b>49 [12]</b>     | <b>29</b>  | <b>21</b> | <b>10</b>                            | <b>9</b>                 | <b>3</b>           | <b>22</b> | <b>143 [12]</b> |

[ ] AU of courses that could be used to fulfil Core requirement and second major requirement concurrently.

| YEAR 1 SEMESTER 1 |                                            |          |           |                       |
|-------------------|--------------------------------------------|----------|-----------|-----------------------|
| Course Code       | Course Title                               | Type     | AU        | Pre-Requisite/Remarks |
| CY1001            | Cell                                       | CNY-Core | 3         | CNYSP Courses         |
| CY1101            | Molecule                                   | CNY-Core | 4         |                       |
| CY1308            | Physics                                    | CNY-Core | 3         |                       |
| CY1500            | Introduction to Research                   | CNY-Core | 2         |                       |
| CY1601            | Mathematics I                              | CNY-Core | 4         |                       |
| IE1005^           | From Computational Thinking to Programming | C        | 3         |                       |
|                   |                                            |          | <b>19</b> |                       |

| YEAR 1 SEMESTER 2 |                                                          |          |           |                       |
|-------------------|----------------------------------------------------------|----------|-----------|-----------------------|
| Course Code       | Course Title                                             | Type     | AU        | Pre-Requisite/Remarks |
| CY1007            | Climate Change                                           | CNY-Core | 3         | CNYSP Course          |
| EE1071            | EEE Laboratory 1                                         | C        | 1         |                       |
| EG1001            | Engineers in Society                                     | C        | 2         |                       |
| IE2104            | Digital Electronics                                      | C        | 3         |                       |
| CC0015            | Health & Wellbeing                                       | CC       | 2         |                       |
| IE0005            | Introduction to Data Science and Artificial Intelligence | PS       | 3         | IE1005                |
|                   |                                                          |          | <b>14</b> |                       |

| YEAR 1 SPECIAL SEMESTER |                        |          |          |                       |
|-------------------------|------------------------|----------|----------|-----------------------|
| Course Code             | Course Title           | Type     | AU       | Pre-Requisite/Remarks |
| CY2003                  | Research Attachment 3  | CNY-Core | 4        | CNYSP Course          |
|                         | Overseas Learning Trip |          |          |                       |
|                         |                        |          | <b>4</b> |                       |

| YEAR 2 SEMESTER 1 |                                                           |            |           |                                                                                              |
|-------------------|-----------------------------------------------------------|------------|-----------|----------------------------------------------------------------------------------------------|
| Course Code       | Course Title                                              | Type       | AU        | Pre-Requisite/Remarks                                                                        |
| CY0001            | Writing Across the Disciplines                            | CNY-Core   | 3         | CNYSP Course                                                                                 |
| EE5915            | Undergraduate Research                                    | BDE        | IP        | Course will be registered in Semester 2.<br>Grades will be recorded at the end of Semester 2 |
| EE2101            | Circuit Analysis                                          | C          | 3         |                                                                                              |
| IE2106^           | Engineering Mathematics I                                 | C          | 3         | CY1602                                                                                       |
| CC0006            | Sustainability: Society, Economy & Environment            | CC         | 3         |                                                                                              |
| ML0004            | Career Design & Workplace Readiness in the V.U.C.A. World | CC         | 2         |                                                                                              |
|                   | Tech-For-Good (T4G)                                       | CSL        | 3         |                                                                                              |
|                   | <b>Data Analytics Core</b>                                | <b>BDE</b> | <b>3</b>  | <b>Knowledge Area 5</b>                                                                      |
|                   |                                                           |            | <b>20</b> |                                                                                              |

| YEAR 2 SEMESTER 2 |                                   |          |           |                                                  |
|-------------------|-----------------------------------|----------|-----------|--------------------------------------------------|
| Course Code       | Course Title                      | Type     | AU        | Pre-Requisite/Remarks                            |
| CY0002            | Ethics                            | CNY-Core | 3         | CNYSP Course                                     |
| EE5915            | Undergraduate Research            | BDE      | 4         | 2-semester long, course registered only in Sem 2 |
| EE2005            | Electrical Devices & Machines     | C        | 3         | EE2101                                           |
| EE2102            | Analog Electronics                | C        | 3         | EE2101                                           |
| IE2107^           | Engineering Mathematics II        | C        | 3         |                                                  |
| IE2110            | Signals and Systems               | C        | 3         | CY1601/CY1602                                    |
| SP0061            | Science & Technology for Humanity | CC       | 3         |                                                  |
|                   |                                   |          | <b>22</b> |                                                  |

| YEAR 3 SEMESTER 1 |                                        |      |    |                        |
|-------------------|----------------------------------------|------|----|------------------------|
| Course Code       | Course Title                           | Type | AU | Pre-Requisite/Remarks  |
| EE2073            | Intro to EEE Design & Project          | C    | 2  |                        |
| EE2103            | Semiconductor Fundamentals             | C    | 3  |                        |
| IE2108^           | Data Structures & Algorithms in Python | C    | 3  |                        |
|                   | Third-Year Technical Elective 1        | MPE  | 3  |                        |
|                   | Profession Preparation                 | PS   | 1  |                        |
| IE4483            | Artificial Intelligence & Data Mining  | BDE  | 3  | EE2107 & IE0005        |
| SC4024            | Data Visualization                     | BDE  | 3  | IE1005 & IE2106/IE4491 |
|                   |                                        |      | 18 |                        |

| YEAR 3 SEMESTER 2 |                                 |      |    |                       |
|-------------------|---------------------------------|------|----|-----------------------|
| Course Code       | Course Title                    | Type | AU | Pre-Requisite/Remarks |
| EE3101            | Engineering Electromagnetics    | C    | 3  | IE2107 (co-req)       |
| EE3180            | Design & Innovation Project     | C    | 3  |                       |
|                   | Third-Year Technical Elective 2 | MPE  | 3  |                       |
|                   | Final Year Technical Elective 1 | MPE  | 3  |                       |
|                   | Data Analytics Elective 1       | BDE  | 3  |                       |
|                   | Date Analytics Elective 2       | BDE  | 3  |                       |
|                   |                                 |      | 18 |                       |

| YEAR 3 SPECIAL SEMESTER |                         |      |    |                                              |
|-------------------------|-------------------------|------|----|----------------------------------------------|
| Course Code             | Course Title            | Type | AU | Pre-Requisite/Remarks                        |
| EE3910                  | Professional Attachment | PS   | 5  | Y3 standing, completed ≥4 semesters of study |
|                         |                         |      | 5  |                                              |

| YEAR 4 SEMESTER 1 |                                   |      |    |                       |
|-------------------|-----------------------------------|------|----|-----------------------|
| Course Code       | Course Title                      | Type | AU | Pre-Requisite/Remarks |
| EE4081            | CNYSO Overseas Final Year Project | C    | 8  | CNYSO Course          |
|                   |                                   |      | 8  |                       |

| YEAR 4 SEMESTER 2 |                                          |      |    |                       |
|-------------------|------------------------------------------|------|----|-----------------------|
| Course Code       | Course Title                             | Type | AU | Pre-Requisite/Remarks |
|                   | Final Year Design Elective 1             | MPE  | 3  |                       |
|                   | Final Year Technical Elective 2          | MPE  | 3  |                       |
|                   | Final Year Design/Technical Elective 2/3 | MPE  | 3  |                       |
|                   | Final Year Design/Technical Elective 3/4 | MPE  | 3  |                       |
|                   | Date Analytics Elective 3                | BDE  | 3  |                       |
|                   |                                          |      | 15 |                       |

Total AU for Graduation: **143**

^ These courses are double-counted towards both EEE as well as the Second Major in Data Analytics.

| Compulsory Courses for Second Major in Data Analytics |             |                                            |    |              |                                       |
|-------------------------------------------------------|-------------|--------------------------------------------|----|--------------|---------------------------------------|
| Course Type                                           | Course Code | Course Title                               | AU | Offering Sem | Pre-req/Remarks                       |
| Core                                                  | IE2106      | Engineering Mathematics I                  | 3  | 1            | CY1602                                |
| Core                                                  | IE2107      | Engineering Mathematics II                 | 3  | 2            | CY1602                                |
| Core                                                  | IE1005      | From Computational Thinking to Programming | 3  | 1            | -                                     |
| Core                                                  | IE2108      | Data Structures & Algorithms               | 3  | 1            | -                                     |
| BDE                                                   | BC2402      | Designing & Developing Databases           | 4  | 1            | Suggested course for Knowledge Area 5 |
| BDE                                                   | IE4483      | Artificial Intelligence & Data Mining      | 3  | 1            | EE2107 & IE0005                       |
| BDE                                                   | SC4024      | Data Visualization                         | 3  | 1            | IE1005 & IE2106/IE4491                |