



# Bachelor of Science in Chemical Engineering Model Study Plan (2022-2023 Cohort onwards) For Students Admitted to the University from the Fall Semester Total Degree Credit hours: 147

(Fall) (Spring) 3 (Fall) (Spring) 6 (Fall) (Spring) 8 (Fall) (Spring)

### Bachelor of Science in Chemical Engineering Model Study Plan (2022-2023 Cohort onwards)

For Students Admitted to the University from the Spring Semester Total Degree Credit hours: 147

|              | Semester | Course Code  | Course Title   | СН | Course type  | Semester    | Course Code  | Course Title                                    | СН | Course type   |
|--------------|----------|--------------|--|----|--|-------------|--------------|---|----|---|
|              |          | MATH1110/130 | Calculus I for Engineering                           |    | Gen Ed Course (Cluster 1: Area 5: Quantitative Reasoning)          |             | MATH1120/135 | Calculus II for Engineering                     | 3  | College Requirement   |
|              | 4        | PHYS105      | General Physics I                                    | 3  | College Requirement  | 2           | PHYS110      | General Physics II                              | 3  | College Requirement   |
| 7            | 1        | PHYS135      | General Physics Lab I                                |    | College Requirement  |             | PHYS140      | General Physics Lab II                          | 1  | College Requirement   |
| ro.          |          | CHEM111      | General Chemistry I                                  |    | Gen Ed Course (Cluster 3: Area 1: Natural Sciences)                |             | STAT210      | Probability and Statistics                      | 3  | College Requirement   |
| <u>≅</u> (9  | Spring)  | GENG230      | Computer Programming                                 |    | College Requirement  | (Fall)      |              | Engineering Ethics                              |    | College Requirement   |
| 1~           | JP11116/ | ESPU107      | Introduction to Academic English For Engineering     |    | Gen Ed Course (Cluster 1: Area 2: English Communication)           | (i aii)     |              | Islamic Culture/Biography of the Prophet "Sira" |    | Gen Ed Course (Cluster 2: Area 4: Islamic Culture)          |
|              |          | CHEM175      | Chemistry Lab I for Engineering                      | 1  | College Requirement  |             | Elective     | Student choice                                  |    | Gen Ed Course (Cluster 2: Area 1: Humanities and Fine Arts) |
|              |          |              |  | 17 |  |             |              |   | 18 |   |
|              |          |              | Engineering and Strength of Materials                | 3  | Specialization   |             | CHME300      | Introduction to Chemical Engineering            | 3  | Specialization  |
| 7            | 2        | MATH2220/145 | Linear Algebra for Engineering                       | 3  | College Requirement  | Δ           | CHME330      | Chemical Engineering Fluid Mechanics            | 3  | Specialization  |
| 9            | 3        |              | Engineering Thermodynamics                           |    | College Requirement  | _           |              | Differential Equations for Engineering          | 3  | College Requirement   |
| 9 /c         |          | HSS105       | Emirates Studies                                     |    | Gen Ed Course (Cluster 2: Area 3: Emirates Society)                | /E 113      | CHME413      | Heat Transfer                                   | 3  | Specialization  |
| a (S         | Spring)  | GEIE222      | Fundamentals of Innovation and Entrepreneurship      | 3  | Gen Ed Course (Cluster 1: Area 1: Innovation and Entrepreneurship) | (Fall)      | CHEM282      | Organic Chemistry for Non-Majors                | 3  | Specialization  |
| ` -          | 1 0,     |              |  |    |  |             |              |   |    |   |
|              |          |              |  | 15 |  |             |              |   | 15 |   |
|              | 5        | CHEM3707/377 | Instrumental Analysis for Chemical Engineering       | 1  | Specialization   | 6<br>(Fall) | CHME411      | Reactor Design                                  | 3  | Specialization  |
| 20           |          | GENG315      | Engineering Economics                                | 3  | Gen Ed Course (Cluster 2: Area 2: Social and Behavioral Sciences)  |             | CHME415      | Fluid Mechanics and Heat Transfer lab           | 1  | Specialization  |
| 9            |          | Elective     | Student choice                                       |    | Major Elective   |             | CHME421      | Mass Transfer                                   | 3  | Specialization  |
| 8            |          | CHME322      | Chemical Engineering Thermodynamics                  |    | Specialization   |             | CHEM351      | Physical Chemistry II                           | 3  | Specialization  |
| ≥ /s         | Spring   | GEIT112      | Fourth Industrial Revolution                         | 3  | Gen Ed Course (Cluster 1: Area 3: Fourth Industrial Revolution)    |             | CHME310      | Computer Applications in Chemical Engineering   | 2  | Specialization  |
| (~           | (Spring) | Elective     | Student choice                                       | 3  | Major Elective   |             | CHEM355      | Physical Chemistry Lab I                        | 1  | Specialization  |
|              |          | CHME417      | Mass Transfer and Reactor Design Lab                 | 1  | Specialization   |             | CHEM113      | General Chemistry II                            | 3  | Specialization  |
|              |          |              |  | 17 |  |             |              |   | 16 |   |
|              |          | CHME508      | Process Control                                      | 3  | Specialization   |             | CHME357      | Fundamentals of Biochemical Engineering         | 3  | Specialization  |
| <del>d</del> | 7        | CHME510      | Process and Plant Design                             | 3  | Specialization   | 8           | CHMES90      | Capstone Engineering Design Project             | 3  | Specialization  |
| <u>ú</u>     | ,        | CHME585      | Design and Critical Thinking in Chemical Engineering | 3  | Gen Ed Course (Cluster 1: Area 4: Critical Thinking)               | 0           | Elective     | Student choice                                  | 3  | Major Elective  |
| ö            |          | CHME506      | Process Modeling & Simulation                        | 3  | Specialization   | /- III      | Elective     | Student choice                                  | 3  | Major Elective  |
| a (S         | Spring)  | CHME528      | Unit Operation and Process Control Lab               |    | Specialization   | (Fall)      | CHMES17      | Mass Transfer Operations                        | 3  | Specialization  |
| `            | 1 0,     | CHME422      | Unit Operation                                       | 3  | Specialization   | ( ' '       | GESU121      | Sustainability                                  | 3  | Gen Ed Course (Cluster 3: Area 2: Sustainability)           |
|              |          |              |  | 16 |  |             |              |   | 18 |   |
|              | ^        |              |  |    |  |             |              |   |    |   |
|              | 9        |              |  | П  |  |             |              |   |    |   |
| œ.           |          | CHME495      | Industrial Training                                  | 15 | Internship   |             |              |   |    |   |
| <b>%</b> (9  | Spring)  |              |  | П  |  |             |              |   |    |   |
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# Bachelor of Science in Chemical Engineering Model Study Plan (2023-2024 Cohort onwards)

For Students Admitted to the University from the Fall Semester

|     | Total Degree Credit hours: 132 |             |  |    |   |            |             |   |    |  |  |
|-----|--------------------------------|-------------|--|----|---|------------|-------------|---|----|--|--|
|     | Semester                       | Course Code | Course Title   | CH | Course type   | Semester   | Course Code | Course Title                                    | СН |  |  |
|     |                                | MATH130     | Calculus I for Engineering                           | 3  | Gen Ed Course (Cluster 1: Area 5: Quantitative Reasoning)       |            | MATH135     | Calculus II for Engineering                     | 3  | College Requirement  |  |
|     |                                | PHYS105     | General Physics I                                    | 3  | College Requirement   | _          | PHYS110     | General Physics II                              | 3  | College Requirement  |  |
| 7   | 1                              | PHYS135     | General Physics Lab I                                |    | College Requirement   | 2          | PHYS140     | General Physics Lab II                          | 1  | College Requirement  |  |
| ਰ   |                                | CHEM111     | General Chemistry I                                  | 3  | Gen Ed Course (Cluster 3: Area 1: Natural Sciences)             |            | GENG220     | Engineering Thermodynamics                      | 3  | College Requirement  |  |
| ė.  | (Fall)                         | ESPU107     | Introduction to Academic English For Engineering     | 3  | Gen Ed Course (Cluster 1: Area 2: English Communication)        | (Spring)   | GESU121     | Sustainability                                  | 3  | Gen Ed Course (Cluster 3: Area 2: Sustainability)                  |  |
|     | (Fall)                         | CHEM175     | Chemistry Lab I for Engineering                      |    | College Requirement   | (Shiiig)   | CHEM113     | General Chemistry II                            | 3  | Specialization   |  |
|     |                                | ISLM101     | Biography of the Prophet "Sira"                      | 3  | Gen Ed Course (Cluster 2: Area 4: Islamic Culture)              |            |             |   |    |  |  |
|     |                                |             |  | 17 |   |            |             |   |    |  |  |
|     |                                | CHME330     | Chemical Engineering Fluid Mechanics                 |    | Specialization  |            |             | Engineering Economics                           | 3  | Gen Ed Course (Cluster 2: Area 2: Social and Behavioral Sciences)  |  |
| 7   | 2                              | MATH140     | Linear Algebra I                                     | 3  | College Requirement   | 1          | CHME357     | Fundamentals of Biochemical Engineering         | 3  | Specialization   |  |
| Ξ.  | 3                              | GENG215     | Engineering Ethics                                   | 2  | College Requirement   | -          | GEIE222     | Fundamentals of Innovation and Entrepreneurship | 3  | Gen Ed Course (Cluster 1: Area 1: Innovation and Entrepreneurship) |  |
| ä   | /- III                         | CHEM282     | Organic Chemistry for Non-Majors                     | 3  | Specialization  | (Spring)   | MATH275     | Ordinary Differential Equations                 | 3  | College Requirement  |  |
| >   | (Fall)                         | CHME300     | Introduction to Chemical Engineering                 | 3  | Specialization  |            | CHME322     | Chemical Engineering Thermodynamics             | 3  | Specialization   |  |
|     | ( /                            | STAT210     | Probability and Statistics                           | 3  | College Requirement   | (-16)      | GENG230     | Computer Programming                            | 3  | Specialization   |  |
|     |                                |             |  | 17 |   |            |             |   | 18 |  |  |
|     | Summer                         | CHME485     | Internship I   | 1  | Internship  |            |             |   |    |  |  |
|     |                                |             |  |    |   |            |             |   |    |  |  |
|     | 5                              | CHME411     | Reactor Design                                       | 2  | Specialization  |            | CHME413     | Heat Transfer                                   | 2  | Specialization   |  |
| ~   |                                | CHEM377     | Instrumental Analysis for Chemical Engineering       |    | Specialization  |            | CHEM355     | Physical Chemistry Lab I                        |    | Specialization   |  |
|     |                                | CHME390     | Engineering and Strength of Materials                |    | Specialization  | 6          | CHME422     | Unit Operation                                  |    | Specialization   |  |
| e e | •                              | Elective    | Student choice                                       |    | Major Elective  | (Spring)   |             | Student choice                                  |    | Major Elective   |  |
| ⋇   | /E-II\                         | CHME360     | Numerical Methods in Chemical Engineering            |    | Specialization  |            | HSS105      | Emirates Studies                                | 3  | Gen Ed Course (Cluster 2: Area 3: Emirates Society)                |  |
|     | (Fall)                         | CHME421     | Mass Transfer  |    | Specialization  |            | CHME415     | Fluid Mechanics and Heat Transfer lab           | 1  |  |  |
|     |                                | CHME310     | Computer Applications in Chemical Engineering        | 2  | 71  |            |             |   | _  |  |  |
|     |                                | -           |  | 17 |   |            |             |   | 13 |  |  |
|     | Summer                         | CHME490     | Internship II  |    | Internship  |            |             |   |    |  |  |
| -   | Julilliei                      | CHME490     | Internship II  | 1  | internship  |            |             |   |    |  |  |
|     |                                |             |  | 1  |   |            |             |   |    |  |  |
| st. | _                              | CHME510     | Process and Plant Design                             |    | Specialization  | _          |             | Student choice                                  | 3  | Gen Ed Course (Cluster 2: Area 1: Humanities and Fine Arts)        |  |
| 2   | 7                              | CHME517     | Mass Transfer Operations                             |    | Specialization  | 8          | CHMESO8     | Process Control                                 | 3  | Specialization   |  |
| က္ထ | •                              | CHME585     | Design and Critical Thinking in Chemical Engineering |    | Gen Ed Course (Cluster 1: Area 4: Critical Thinking)            | _          | CHMES90     | Capstone Engineering Design Project             | 3  | Specialization   |  |
| ×   | /E-II\                         | Elective    | Student choice                                       |    | Major Elective  | /C ==:===\ | CHME528     | Unit Operation and Process Control Lab          | 1  | Specialization   |  |
|     | (Fall)                         | CHME417     | Mass Transfer and Reactor Design Lab                 |    | Specialization  | (Spring)   | CHMESO6     | Process Modeling & Simulation                   |    | Specialization   |  |
|     |                                | GEIT112     | Fourth Industrial Revolution                         | 3  | Gen Ed Course (Cluster 1: Area 3: Fourth Industrial Revolution) |            | Elective    | Student choice                                  |    | Major Elective   |  |
|     |                                |             |  | 16 |   |            |             |   | 16 |  |  |

# Bachelor of Science in Chemical Engineering Model Study Plan (2023-2024 Cohort onwards) For Students Admitted to the University from the Spring Semester Total Degree Credit hours: 132

|     | Total Degree Cleuit Hours. 132 |             |  |    |   |             |             |   |    |  |  |
|-----|--------------------------------|-------------|--|----|---|-------------|-------------|---|----|--|--|
|     | Semester                       | Course Code | Course Title   | CH | Course type   | Semester    | Course Code | Course Title                                    | СН | Course type  |  |
|     |                                | MATH130     | Calculus I for Engineering                           | 3  | Gen Ed Course (Cluster 1: Area 5: Quantitative Reasoning) |             | MATH135     | Calculus II for Engineering                     | 3  | College Requirement  |  |
| н.  | 4                              | PHYS105     | General Physics I                                    | 3  | College Requirement                                       | 2           | PHYS110     | General Physics II                              | 3  | College Requirement  |  |
| 7   | 1                              | PHYS135     | General Physics Lab I                                | 1  | College Requirement                                       |             | PHYS140     | General Physics Lab II                          | 1  | College Requirement  |  |
| œ   |                                | CHEM111     | General Chemistry I                                  | 3  | Gen Ed Course (Cluster 3: Area 1: Natural Sciences)       | (Fall)      | GESU121     | Sustainability                                  | 3  | Gen Ed Course (Cluster 3: Area 2: Sustainability)                  |  |
| ě   | (Spring)                       | ESPU107     | Introduction to Academic English For Engineering     | 3  | Gen Ed Course (Cluster 1: Area 2: English Communication)  |             | GENG220     | Engineering Thermodynamics                      | 3  | College Requirement  |  |
| Ĺ   | (Shiiig)                       | CHEM175     | Chemistry Lab I for Engineering                      |    | College Requirement                                       |             | HSS105      | Emirates Studies                                | 3  | Gen Ed Course (Cluster 2: Area 3: Emirates Society)                |  |
|     |                                | ISLM101     | Biography of the Prophet "Sira"                      | 3  | Gen Ed Course (Cluster 2: Area 4: Islamic Culture)        |             |             |   |    |  |  |
|     |                                |             |  | 17 |   |             |             |   | 16 |  |  |
|     |                                | CHME300     | Introduction to Chemical Engineering                 | 3  | Specialization  |             | CHME330     | Chemical Engineering Fluid Mechanics            | 3  | Specialization   |  |
| 7   | 2                              | STAT210     | Probability and Statistics                           | 3  | College Requirement                                       | 1           | GENG315     | Engineering Economics                           | 3  | Gen Ed Course (Cluster 2: Area 2: Social and Behavioral Sciences)  |  |
| -   | 5                              | MATH140     | Linear Algebra I                                     | 3  | College Requirement                                       | -           | MATH275     | Ordinary Differential Equations                 | 3  | College Requirement  |  |
| 8   | (a . )                         | GENG215     | Engineering Ethics                                   | 2  | College Requirement                                       | /- III      | CHME322     | Chemical Engineering Thermodynamics             | 3  | Specialization   |  |
| >   | (Spring)                       | CHEM113     | General Chemistry II                                 | 3  | Specialization  | (Fall)      | GENG230     | Computer Programming                            | 3  | Specialization   |  |
|     | (-10)                          | CHEM282     | Organic Chemistry for Non-Majors                     | 3  | Specialization  | ()          | GEIE222     | Fundamentals of Innovation and Entrepreneurship | 3  | Gen Ed Course (Cluster 1: Area 1: Innovation and Entrepreneurship) |  |
|     |                                |             |  | 17 |   |             |             |   | 18 |  |  |
|     | Summer                         | CHME485     | Internship I   | 1  | Internship  |             |             |   |    |  |  |
|     |                                |             |  |    |   |             |             |   |    |  |  |
|     |                                | CHEM351     | Physical Chemistry II                                | 3  | Specialization  |             | CHME411     | Reactor Design                                  | 3  | Specialization   |  |
| m   |                                | CHME357     | Fundamentals of Biochemical Engineering              | 3  | Specialization  | 6<br>(Fall) | Elective    | Student choice                                  | 3  | Major Elective   |  |
|     |                                | CHME390     | Engineering and Strength of Materials                | 3  | Specialization  |             | CHME421     | Mass Transfer                                   | 3  | Specialization   |  |
| B   | 5                              | CHEM355     | Physical Chemistry Lab I                             | 1  | Specialization  |             | CHEM377     | Instrumental Analysis for Chemical Engineering  | 1  | Specialization   |  |
| ⋝   |                                | CHME413     | Heat Transfer  | 3  | Specialization  |             | CHME310     | Computer Applications in Chemical Engineering   | 2  | Support course   |  |
|     | (Spring)                       | CHME415     | Fluid Mechanics and Heat Transfer lab                | 1  | Specialization  |             | GEIT112     | Fourth Industrial Revolution                    | 3  | Gen Ed Course (Cluster 1: Area 3: Fourth Industrial Revolution)    |  |
|     | (969)                          |             |  |    |   |             | CHME417     | Mass Transfer and Reactor Design Lab            | 1  | Specialization   |  |
|     |                                |             |  |    |   |             | CHME360     | Numerical Methods in Chemical Engineering       | 2  | Specialization   |  |
|     |                                |             |  | 14 |   |             |             |   | 18 |  |  |
|     |                                | CHME506     | Process Modeling & Simulation                        | 3  | Specialization  |             | CHME590     | Capstone Engineering Design Project             | 3  | Specialization   |  |
|     | 7                              | CHMESO8     | Process Control                                      | 3  | Specialization  | 8           | CHMES10     | Process and Plant Design                        | 3  | Specialization   |  |
| 2   | /                              | CHME585     | Design and Critical Thinking in Chemical Engineering | 3  | Gen Ed Course (Cluster 1: Area 4: Critical Thinking)      | 0           | Elective    | Student choice                                  | 3  | Major Elective   |  |
| e a |                                | CHME528     | Unit Operation and Process Control Lab               | 1  | Specialization  |             | CHMES17     | Mass Transfer Operations                        | 3  | Specialization   |  |
| ×   | (Spring)                       | CHME422     | Unit Operation                                       |    | Specialization  | (Fall)      | Elective    | Student choice                                  |    | Gen Ed Course (Cluster 2: Area 1: Humanities and Fine Arts)        |  |
|     | (978)                          | Elective    | Student choice                                       | 3  | Major Elective  | ()          |             |   |    |  |  |
|     |                                |             |  | 15 |   |             |             |   | 15 |  |  |
|     | Summer                         | CHME490     | Internship II  | 1  | Internship  |             |             | •   |    | •  |  |
|     | Janiffici                      | C111112430  | manapa   | -  | ance rump   |             |             |   |    |  |  |
|     |                                |             |  | 1  |   |             |             |   |    |  |  |





## Bachelor of Science in Chemical Engineering Model Study Plan (2025-2026 Cohort onwards)

### For Students Admitted to the University from the Fall Semester Total Degree Credit hours: 132

| Total Degree Credit Hours: 132 |                     |  |    |   |           |                     |   |     |   |
|--------------------------------|---------------------|--|----|---|-----------|---------------------|---|-----|---|
| Semester                       | Course Code         | Course Title   | CH |   | Semester  | Course Code         | Course Title                                    | СН  |   |
|                                | MATH130             | Calculus I for Engineering                                       |    | Gen Ed Course (Cluster 1: Area 5: Quantitative Reasoning) |           | MATH135             | Calculus II for Engineering                     | 3   | College Requirement                                     |
|                                | PHYS105             | General Physics I  | 3  | College Requirement                                       | ~         | PHYS110             | General Physics II                              | 3   | College Requirement                                     |
| 1                              | PHYS135             | General Physics Lab I  |    | College Requirement                                       |           | PHYS140             | General Physics Lab II                          | 1   | College Requirement                                     |
| ro                             | CHEM111             | General Chemistry I  | 3  | Gen Ed Course (Cluster 3: Area 1: Natural Sciences)       |           | GENG220             | Engineering Thermodynamics                      | 3   | College Requirement                                     |
| (Fall)                         | GEAE101             | Academic English for Humanities and STEM                         | 3  | Gen. Ed. Theme 2: Academic Language Proficiency           | (Spring)  | Elective            | Student choice                                  | 3   | Gen. Ed. Theme 5: Sustainability                        |
| (i aii)                        | CHEM175             | Chemistry Lab I for Engineering                                  |    | College Requirement                                       | (Shiiig)  | CHEM113             | General Chemistry II                            | 3   | Specialization  |
|                                | Elective            | Student choice   | 3  | Gen. Ed. Theme 7 or 8 or 9 or 10 or 11                    |           |                     |   |     |   |
|                                |                     |  | 17 |   |           |                     |   | 16  |   |
|                                | CHME330             | Chemical Engineering Fluid Mechanics                             | 3  | Specialization  |           | GENG315             | Engineering Economics                           | 3   | College Requirement                                     |
| 4 3                            | MATH140             | Linear Algebra I   | 3  | College Requirement                                       | 1         | CHME357             | Fundamentals of Biochemical Engineering         | 3   | Specialization  |
| ,                              | GENG215             | Engineering Ethics   | 2  | College Requirement                                       | -         | GEIE222             | Fundamentals of Innovation and Entrepreneurship | 3   | Gen. Ed. Theme 4: Entrepreneurship                      |
| 9 (- 11)                       | CHEM282             | Organic Chemistry for Non-Majors                                 |    | Specialization  | /c · \    | MATH275             | Ordinary Differential Equations                 | 3   | College Requirement                                     |
| = (Fall)                       | CHME300             | Introduction to Chemical Engineering                             |    | Specialization  | (Spring)  | CHME322             | Chemical Engineering Thermodynamics             | 3   | Specialization  |
| · · /                          | STAT210             | Probability and Statistics                                       | 3  | College Requirement                                       | (-1- 0)   | GENG230             | Computer Programming                            | 3   | Specialization  |
|                                |                     |  | 17 |   |           |                     |   | 18  |   |
| Summer                         | CHME485             | Internship I   |    | lat-reads.  |           |                     |   |     |   |
| Julillici                      | CHMIC463            | intensilpi   |    | Internship  |           |                     |   |     |   |
|                                |                     |  | 1  |   |           |                     | Fr 4  |     |   |
|                                | CHME411             | Reactor Design<br>Instrumental Analysis for Chemical Engineering |    | Specialization  |           | CHME413             | Heat Transfer                                   | 3   | Specialization  |
| 9 -                            | CHEM377             |  |    | Specialization  | 6         | CHEM355             | Physical Chemistry Lab I                        | -1- | Specialization  |
| a )                            | CHME390             | Engineering and Strength of Materials                            |    | Specialization  | Ŭ         | CHME422             | Unit Operation                                  |     | Specialization  |
| g                              | Elective<br>CHME421 | Student choice<br>Mass Transfer                                  |    | Major Elective<br>Specialization                          |           | Elective<br>GEEM110 | Student choice<br>Contemporary Emirati Studies  |     | Major Elective  Gen. Ed. Theme 1: UAE National Identity |
| (Fall)                         |                     |  |    |   | (Spring)  |                     |   |     |   |
| ()                             | CHME310             | Computer Applications in Chemical Engineering                    | 2  | Specialization  | (8,8)     | CHME415             | Fluid Mechanics and Heat Transfer lab           |     | Specialization  |
|                                |                     |  |    |   |           | CHME360             | Numerical Methods in Chemical Engineering       |     | Specialization  |
|                                |                     |  | 15 |   |           |                     |   | 15  |   |
| Summer                         | CHME490             | Internship II  | 1  | Internship  |           |                     |   |     |   |
|                                |                     |  | 1  |   |           |                     |   |     |   |
|                                | CHME510             | Process and Plant Design   | 3  | Specialization  |           | Elective            | Student choice                                  | 3   | Gen. Ed. Theme 7 or 8 or 9 or 10 or 11                  |
| 7                              | CHME517             | Mass Transfer Operations   |    | Specialization  | 8         | CHMESO8             | Process Control                                 | 3   | Specialization  |
| a /                            | CHMES85             | Design and Critical Thinking in Chemical Engineering             |    | Gen Ed Course (Cluster 1: Area 4: Critical Thinking)      | ŏ         | CHMES90             | Capstone Engineering Design Project             | 3   | Specialization  |
| ອ                              | Elective            | Student choice   |    | Major Elective  |           | CHME528             | Unit Operation and Process Control Lab          | 1   | Specialization  |
| (Fall)                         | CHME417             | Mass Transfer and Reactor Design Lab                             |    | Specialization  | (Spring)  | CHMESO6             | Process Modeling & Simulation                   | 3   | Specialization  |
| (1 411)                        | Elective            | Student choice   |    | Gen. Ed. Theme 3: Innovation                              | (2611118) | Elective            | Student choice                                  | 3   | Major Elective  |
|                                |                     |  | 10 |   |           |                     |   | 10  | majar accente   |

Bachelor of Science in Chemical Engineering Model Study Plan (2025-2026 Cohort onwards)

### For Students Admitted to the University from the Spring Semester Total Degree Credit hours: 132

|          | Semester | Course Code | Course Title   | CH | Course type   | Semester    | Course Code | Course Title                                    | СН | Course type                             |
|----------|----------|-------------|--|----|---|-------------|-------------|---|----|---|
|          |          | MATH130     | Calculus I for Engineering                           |    | Gen Ed Course (Cluster 1: Area 5: Quantitative Reasoning) |             | MATH135     | Calculus II for Engineering                     | 3  | College Requirement                     |
|          | 4        | PHYS105     | General Physics I                                    | З  | College Requirement                                       | 2           | PHYS110     | General Physics II                              | 3  | College Requirement                     |
| 7        | 1        | PHYS135     | General Physics Lab I                                |    | College Requirement                                       |             | PHYS140     | General Physics Lab II                          | 1  | College Requirement                     |
| œ        |          | CHEM111     | General Chemistry I                                  | З  | Gen Ed Course (Cluster 3: Area 1: Natural Sciences)       |             | Elective    | Student choice                                  | 3  | Gen. Ed. Theme 5: Sustainability        |
| ≗        | (Spring) | GEAE101     | Academic English for Humanities and STEM             | З  | Gen. Ed. Theme 2: Academic Language Proficiency           | (Fall)      | GENG220     | Engineering Thermodynamics                      | 3  | College Requirement                     |
|          | (Spring) | CHEM175     | Chemistry Lab I for Engineering                      |    | College Requirement                                       | (i aii)     | GEEM110     | Contemporary Emirati Studies                    | 3  | Gen. Ed. Theme 1: UAE National Identity |
|          |          | Elective    | Student choice                                       | З  | Gen. Ed. Theme 7 or 8 or 9 or 10 or 11                    |             |             |   |    |   |
|          |          |             |  | 17 |   |             |             |   | 16 |   |
|          |          | CHME300     | Introduction to Chemical Engineering                 | 3  | Specialization  | 1           | CHME330     | Chemical Engineering Fluid Mechanics            | 3  | Specialization                          |
| ~        | 2        | STAT210     | Probability and Statistics                           | 3  | College Requirement                                       |             | GENG315     | Engineering Economics                           | 3  | College Requirement                     |
| -        | 5        | MATH140     | Linear Algebra I                                     | 3  | College Requirement                                       | -           | MATH275     | Ordinary Differential Equations                 | 3  | College Requirement                     |
| 8        | /a       | GENG215     | Engineering Ethics                                   | 2  | College Requirement                                       | /- III      | CHME310     | Computer Applications in Chemical Engineering   | 1  | Specialization                          |
| ≻        | (Spring) | CHEM113     | General Chemistry II                                 | 3  | Specialization  | (Fall)      | GENG230     | Computer Programming                            | 3  | Specialization                          |
|          | (-16)    | CHEM282     | Organic Chemistry for Non-Majors                     | 3  | Specialization  |             | GEIE222     | Fundamentals of Innovation and Entrepreneurship | 3  | Gen. Ed. Theme 4: Entrepreneurship      |
|          |          |             |  | 17 |   |             |             |   | 16 |   |
|          | Summer   | CHME485     | Internship I   | 1  | Internship  |             |             |   |    |   |
|          |          |             |  | 1  |   |             |             |   |    |   |
|          |          | CHEM351     | Physical Chemistry II                                |    | Specialization  |             | CHME411     | Reactor Design                                  | 3  | Specialization                          |
| co       |          | CHME357     | Fundamentals of Biochemical Engineering              |    | Specialization  | 6<br>(Fall) | Elective    | Student choice                                  | 3  | Major Elective                          |
| 늞        | 5        | CHME390     | Engineering and Strength of Materials                | 3  | Specialization  |             | CHME421     | Mass Transfer                                   | 3  | Specialization                          |
| ĕ        | ,        | CHME322     | Chemical Engineering Thermodynamics                  |    | Specialization  |             | CHEM377     | Instrumental Analysis for Chemical Engineering  | 1  | Specialization                          |
| ≻        | /c · \   | CHME413     | Heat Transfer  | З  | Specialization  |             | Elective    | Student choice                                  | 3  | Gen. Ed. Theme 3: Innovation            |
|          | (Spring) | CHME415     | Fluid Mechanics and Heat Transfer lab                | 1  | Specialization  |             | CHME417     | Mass Transfer and Reactor Design Lab            | 1  | Specialization                          |
|          | (-1- 0)  |             |  |    |   |             | CHME360     | Numerical Methods in Chemical Engineering       | 2  | Specialization                          |
|          |          |             |  |    |   |             | CHEM355     | Physical Chemistry Lab I                        | 1  | Specialization                          |
|          |          |             |  | 16 |   |             |             |   |    |   |
|          |          | CHMESO6     | Process Modeling & Simulation                        | 3  | Specialization  |             | CHMES90     | Capstone Engineering Design Project             | 3  | Specialization                          |
| <b>a</b> | 7        | CHMESO8     | Process Control                                      | 3  | Specialization  | 8           | CHMES10     | Process and Plant Design                        | 3  | Specialization                          |
| 놂        | ,        | CHME585     | Design and Critical Thinking in Chemical Engineering | 3  | Specialization  | 0           | Elective    | Student choice                                  | 3  | Major Elective                          |
| ä        | /c · \   | CHME528     | Unit Operation and Process Control Lab               |    | Specialization  | /E III      | CHMES17     | Mass Transfer Operations                        | 3  | Specialization                          |
| ≻        | (Spring) | CHME422     | Unit Operation                                       | 2  | Specialization  | (Fall)      | Elective    | Student choice                                  | 3  | Gen. Ed. Theme 7 or 8 or 9 or 10 or 11  |
|          | (-10/    | Elective    | Student choice                                       | 3  | Major Elective  | ,,          |             |   |    |   |
|          |          |             |  | 15 |   |             |             |   | 15 |   |
|          | Summer   | CHME490     | Internship II  | 1  | Internship  |             |             | -   |    | -                                       |
|          |          |             |  | 1  |   |             |             |   |    |   |