CHEMICAL ENGINEERING

Courses within the eleven classic minor categories include: will come from the student's choice of electives from other courses.

CLASSICAL STUDIES.

two elective credits by registering for R.

CLASSICAL CHRISTIAN

electives:

CHINESE.

24 required hours, including Chemistry 101 or 105; 102, 227, and 241; and 8 hours from: Chemistry 231, 242, 245, 342, 345, 346, 406, and 431.

CHEMISTRY.

18 required hours, including Chemistry 101 or 121; Physics 102 or 122; and Astronomy 206, 207, 301, and 310.

BIBLICAL & RELIGIOUS STUDIES.

18 required hours of Religion, Greek, and/or Hebrew courses.

BIOLOGY.

22 required hours, including Biology 101, 102, 233, and 234 plus six hours from Biology 301, 302, 305, 308, 310, 313, 314, 320, 322, 323, 325, 326, 327, 331, 334, 341, 346, 372, 390, 403, 407, 409, and 421.

BUSINESS.

18 required hours, including Accounting 201, 202; Finance 301; Management 201, 203; and Marketing 204. This minor is not available to students with academic majors within the Business Program.

CHEMICAL ENGINEERING.

19-20 required hours, including Engineering 220, 320, 420; Mechanical Engineering 325, 326, 352; and one of Mechanical Engineering 214, Chemistry 346, or Physics 340.

CHEMISTRY.

24 required hours, including Chemistry 101 or 105; 102, 227, and 241; and 8 hours from: Chemistry 231, 242, 245, 342, 345, 346, 406, and 431.

CHINESE.

18 required hours of Chinese courses beyond Chinese 101 and 102, including Chinese 201, 202, and 301; and at least one of Chinese 302, 390 (Chinese Conversation), or 390 (Advanced Chinese Conversation). Six additional credit hours may be selected from English 205 (World Literature: Asia), Music 330 (World Music: Asia and the Middle East), Political Science 344 (Asian Politics) or any other 200-level or higher Chinese electives.

CHRISTIAN MINISTRIES.

24 required hours, including Religion 211, 212, 216, and 480; and 12 hours from the following electives:

 - Ministry Electives (6 hours): Two courses from Religion 246, 251, 253, 320, or 330.

  Note: Religion 290 “Evangelism and Discipleship”, 290 “Sermons: Christian Preaching Through the Centuries”, 290 “Understanding and Teaching the Bible”, and 360 “Perspectives on the Christian World Movement” may also be used as ministry electives.

Historical Elective (3 hours): One course from Religion 247, 248, 341, or 342.

CLASSICAL CHRISTIAN EDUCATION.

23 required hours: Students must complete 21 hours as required by the Classical Studies minor, plus a two-hour internship explained below. As part of the 21 hour requirement, students pursuing this minor must take History 204, 208, and 410. Students pursuing this minor must also take an Internship in Classical Christian Education receiving two elective credits by registering for Religion 480 Internship in Religion.

CLASSICAL STUDIES.

21 required hours: Students must take one relevant (three credit) course from three of the following eleven categories: 1) Anthropology, 2) Art, 3) Biblical & Religious Studies, 4) Classical Christian Education, 5) Greek, 6) History, 7) Latin, 8) Literature, 9) Philosophy, 10) Political Science, and 11) Rhetoric. (see course categories below). The remaining 12 credits will come from the student’s choice of electives from other courses listed in the categories below.

Courses within the eleven classic minor categories include:

1. Anthropology: Sociology 103
2. Art: Art 201
4. Classical Christian Education: History 204, 410
5. Greek: Greek 101, 102, 201, 202, Higher level Independent Studies available
6. History: History 207, 208, 341, 346, 376
7. Latin: Latin 101, 102, 201, 202, 290
8. Literature: English 302

A minor may be declared anytime during the fall or spring terms. Use a Major/Minor Change form to request the minor. One-half of all required credits leading to a minor must be earned at Grove City College.
COMMUNICATION STUDIES. 18 required hours, including Communication Studies 104 or three semesters of Communication Studies 109; one theory course (Communication Studies 110, 207, 222, or 305); plus 12 hours of Communication Studies electives. The one credit course, Theatre 259, may be repeated, and a maximum of three hours may count toward the minor. A Communication Internship (Communication Studies 480) may not count as an elective course toward the minor.

COMPUTER GAME DESIGN and DEVELOPMENT. 21 required hours, including Psychology 101 or Sociology 103; Communication Studies 110; Communication Studies 212; Communication Studies 135 or 303; and Computer Science 441, 446, and 447.

COMPUTER SCIENCE. 18 required hours, including Computer Science 141, 220, and 222. Select nine hours of Computer Science courses 200-level and above. (Students pursuing International Business, Marketing, Management, or Physics as a first major might prefer Computer Information Systems or Applied Physics/Computer as the first major rather than this minor.)

CREATIVE WRITING. 21 required hours, including Writing 315 or an approved Writing 390 course; one of Writing 305 or 310; four courses from Writing 271, 281, 359, 382, 383, or 384; and one genre literature course from English 230, 242, 243, 245, 246, 250, 252, 261, or 262.

CYBERSECURITY. 18 required hours, including Computer Science 205, 340, 448, 475; Mathematics 210; and one course from Political Science 302, Sociology 221, or Sociology 314.

DATA SCIENCE. 19 required hours, including Computer Science 344, 435, 445; Marketing 325; Mathematics 222; and Psychology 201.

DESIGN. 21 required hours, including Design 101, 102, 201, 202; Design 220 or Art 202; and two courses from Art 101, 102, 121, Design 110, 210, Communication Studies 212, 245, 277, or 378.

ECONOMICS. 21 required hours, including Economics 101, 102 and 120, plus twelve additional hours in economics.

ENGLISH. 18 required hours of English (ENGL) literature courses.

ENTREPRENEURSHIP. 22 required hours, including Accounting 201; Entrepreneurship 101, 102, 301; Finance 301; and nine hours from Entrepreneurship 302, 303, 307, 309, 312, 314, 317, 408, 423, 430, or 467. This minor is not available to students completing an Entrepreneurship major.

EXERCISE SCIENCE. Prerequisites (9 hours): Physical Education 102 or 112; Biology 101; and Chemistry 101. All prerequisite courses must be completed before beginning any required course of the curriculum. Required courses (19 hours): Exercise Science 101, 234, 253, and 256; Exercise Science 251 or 305; Exercise Science 220 or 235; and Exercise Science 221 or 306. Biology 341 may be taken in the place of Exercise Science 253.

FAMILY STUDIES. 19 required hours, including Psychology 201; Sociology 312; one course from: Psychology 204, Political Science 277, or Sociology 377; and three courses from: Psychology 209, 211, 322, or Sociology 251.

FINANCE. 18 required hours, including Finance 301, 432, 440, and three courses from Finance 341, 434, 435, 436, 462, or Entrepreneurship 430. This minor is not available to students completing a Finance major.

FRENCH. 18 required hours of French courses beyond French 101 and 102, excluding FREN 362.

HIGH-TECH ENTREPRENEURSHIP. 24 required hours, including Computer Science 401 or 402; Computer Science 442, 451, and 452; Economics 120; Entrepreneurship 101, 301, and 402; and Entrepreneurship 317 or 409.

HISTORY. 18 required hours, with six hours selected from each of the three following areas:
- (American) History 283, 285, 334, 336, 349, 350, 357, or 379;
- (European) History 208, 209, 212, 261, 262, 265, or 372;
- (Other) History 143, 144, 207, 224, 231, 260, 270, 317, 318, 337, 338, 341, 343, 346, 360, 370, 375, 376, 378, 390, 400, 460, 470, 480, 488; Political Science 317 or 318; Religion 341, 342, or 343.
INTERNATIONAL BUSINESS. 18 required hours, including International Business 305, 445; six hours of 200-level or higher foreign language courses; and two courses from International Business 416, Economics 206, 303, 390, or Entrepreneurship 307. This minor is not available to students completing an International Business major.

INTERNATIONAL STUDIES. 24 required hours, including modern language competency demonstrated by completing at least the second year course sequence (201-202) or equivalent in a widely spoken modern language other than the student’s native language; an approved international academic experience (study abroad) at the college level for a semester or year, or 3 credits of international internship experience; six hours from Communication Studies 225, Global Studies 300, Psychology 200, or Sociology 103; three hours of toward a Global Capstone, choosing from Communication Studies 470, 480, or 499; and 15 hours from the following courses, with no more than 3 courses from any one of these emphases:

1. International Politics, History, Religion
   - History 141, 212, 224, 231, 263, 265; Political Science 301, 333, 341, 342, 344; Religion 248, or 342.
2. Global Economics
   - International Business 305, 416, 445; Economics 202, or 206.
3. Global Society & Culture
   - Chinese 321; French 305, 301, 321, 326, 340; Global Studies 310; Sociology 241, 375; Spanish 320, 333; Spanish 322 or 323; or Spanish 326 or 327.
4. International Art, Music, English
   - English 205, 206, 250, 324, 325; or Music 330.

INTERNET ENTREPRENEURSHIP. 21 required hours, including Entrepreneurship 101, 328, 330, 409; Design 101, 210; and either Entrepreneurship 309 or Marketing 315. This minor is not available to students completing an Entrepreneurship major.

MANAGEMENT. 18 required hours, including Management 203, 457, 475, and three courses from Management 302, 304, 307, 424, 433, 450, 458, 464, 465, or Marketing 325. This minor is not available to students completing a Management major.

MARKETING. 18 required hours, including Marketing 204, 315, 411, 415, 419, and one course from Marketing 325, 412, 414, 417, 420, or Management 442. This minor is not available to students completing a Marketing major.

MATHEMATICS. 22 required hours in Mathematics courses, including Mathematics 210 or 213 and 222; excluding Mathematics 110, 111, 118, 119, 151, 152, 201, 237, 240, 305, 306, and 307.

MEDICAL PHYSICS. 19 required hours, including Physics 101 or 121; Physics 102 or 122; and Physics 234, 321, 401, and 402.

MOBILE DEVELOPMENT. 18 required hours, including Computer Science 401, 402, 441; and three courses from Design 101, 210, Entrepreneurship 309, or Entrepreneurship 330.

MUSIC. 18 required hours in Music courses, including Music 103, 104, 105; Music 331 or 332; three ½ hour juried lessons, choosing from Music 150-191; two semesters participation (for credit) in Music 100, 101, or 102; and four additional hours of Music electives. Note: While enrolled as a music minor, students must register each semester for Music 198, which requires attendance at four recitals per semester; perform in at least two student recitals while enrolled as a music minor; and attend all Music Department meetings each semester. All prospective Music minors must pass an audition before being admitted into the Music minor program.

MUSICAL THEATRE. 24 required hours, including Theatre 251, 259 (taken 2 times), 261; Music 103, 105, 161 (taken 3 times); Physical Education 211, 213, 290 Jazz & Tap; and six hours from Theater 262, 320, 351, Music 222, or Music/Theater 210. All prospective Musical Theatre minors must pass an audition before being admitted into the Musical Theatre minor program.

NATIONAL SECURITY STUDIES. 18 required hours, including Political Science 302, 303, 335, and History 336; and six hours from History 337, 338, 375; Political Science 310, 341, 342, or 344.

NUTRITION. 15 required hours, including Exercise Science 234, 240, 244, 254, and 344.

PHILOSOPHY. 18 required hours, including Philosophy 161 or 191, Philosophy 201 or 211, and twelve additional hours of Philosophy courses. A maximum of three credits of independent study in Philosophy may count toward the minor. Political Science 205 may also count as toward this minor.

PHYSICS. 18 required hours, including Physics 101, 102, 135, and 234 (12 hours). Two of the following (6 hours): Physics 303, 305, 310, 431 or 442 (Electrical Engineering majors may not take Physics 305).
POLITICAL PHILOSOPHY and THEOLOGY. 18 required hours, including Political Science 355, 356; and 12 hours from Philosophy 191, 314, 340, 380, Political Science 350, 354, 357, or Religion 362.

POLITICAL SCIENCE. 18 required hours, including Political Science 104, 201, 204, and 205; and six hours of Political Science electives.

PRE-LAW. 18 required hours, including Political Science 317, 318 (or History 317, 318); Political Science 351 or Philosophy 340; Philosophy 211; and six hours from Accounting 201, Management 303, 304, 308, Communication Studies 104, Philosophy 201, Political Science 305, 308, or Sociology 233, 331.

PSYCHOLOGY. 18 required hours of Psychology courses, including Psychology 101 and excluding Psychology 102. Exercise Science 203 Exercise Psychology may also count toward the Psychology minor.

ROBOTICS. 19-20 required hours including Robotics 301, 302; Engineering 301; a 3-4 credit robotics-related capstone project; and nine hours from Computer Science 445, Electrical Engineering 310, Mechanical Engineering 316, Mechanical Engineering 410, Electrical Engineering 421 or Mechanical Engineering 407, or Electrical Engineering 422.

SOCIAL ENTERPRISE. 21 required hours, including Entrepreneurship 307, Entrepreneurship 408 or International Business 408, Sociology 201 and 356; Communication Studies 225 or Global Studies 300; and six hours from the following: Sociology 208 or 314; Social Work 101, 305 or 382; or Entrepreneurship, Management, or Sociology 390 with department chair approval. This minor is only available to students with a major within the Business Program.

SOCIAL ENTREPRENEURSHIP. 21 required hours, including Entrepreneurship 101, 307; Entrepreneurship 408 or International Business 408; Accounting 201; Finance 301; Management 203; and Marketing 204. This minor is only available to students with a Sociology major.

SOCIAL INNOVATION. 21 required hours, including Entrepreneurship 408 or International Business 408; Sociology 201 and 356; Communication Studies 225 or Global Studies 300; and six hours from the following: Sociology 208 or 314; Social Work 101, 305 or 382; Entrepreneurship, Management, or Sociology 390 with department chair approval. This minor is only available to students with an Entrepreneurship major.

SOCIAL WORK. 21 required hours including Social Work 101, 264, 272, 342, 382, and six hours from Sociology 203, 208, Social Work 205, 280, 305, or Psychology 312.

SPANISH. 18 required hours of Spanish courses beyond Spanish 201 and 202, including Spanish 295 or 301; Spanish 303; Spanish 305 or 340; one Spanish literature and culture course (Spanish 320, 330, or 331); one Latin American literature and culture course (Spanish 321, 325, or 328); and three hours of 300 or 400-level Spanish electives, excluding Spanish 362.

SPANISH FOR THE PROFESSIONS. 18 required hours of Spanish courses beyond Spanish 201 and 202, including Spanish 295 or 301; Spanish 303, 306, and 315; Spanish 316 or 317; and one literature and culture course (Spanish 319, 320, 321, 325, 326, 327, 328, 330, 331, or 333).

STUDIO ART. 21 required hours: One 2D course from Art 101, 105 or 121; one 3D course from Art 103, 104 or 111; one Art History course from Art 201 or 202; 12 hours from Art 101, 103, 104, 105, 111, 121, 201, 202, 207, 208, 290, 390, Design 101, 102, or 210.

THEATRE. 24 required hours, including English 250; Theatre 251, Theatre 261, and the 1-hour Theatre 259 course, which must be taken three times; and twelve hours from: English 252, 302, 351, 352; Theatre 255, 262, 320, 351, or 384. Theatre or English 260, 290, 360, 390, 460, or 480 are also acceptable options with departmental approval and must relate directly to theatre studies.

WRITING. 21 required hours, including Writing 305* or 310; Writing 315; one 300-level Writing course (excluding 305 and 310) or a Writing or Communication Studies internship; and twelve hours from the following two writing track options:

1. Professional Writing Track: Four courses from Communication Studies 135, 255, 300, 378, Writing 271, and Entrepreneurship or Marketing 328.
2. Technical Writing Track: Three courses from Design 101, 210, and Communication Studies 378; and one course from Computer Science 141, 155, 205, and Electrical Engineering 204. *Note: Writing 305 must be completed by students pursuing the Technical Writing Track.