A minor consists of at least 15 semester hours, with no fewer than nine credits at the 3000 level or higher. A student cannot major and minor in the same field or acquire a minor that is not allowed by the degree program. In programs that require a minor, courses may not be used to fulfill both the major and minor requirements. Courses that count towards a student’s major, but are outside the major’s course rubric, may also be used to fulfill minor requirements. Students are encouraged to contact the department offering the minor for advising. Specific requirements are detailed below.

Note: Some courses in the minors have prerequisite courses. Students should select a minor and take any prerequisites as early as possible in their academic careers.

### Accounting
A minor in Accounting requires ACCT 2010, 2040, 3110, 3120, and nine hours selected from 3000- or 4000-level accounting courses. Students planning to pursue the Master of Professional Accountancy degree program should select courses in consultation with the school’s graduate coordinator.

### Adult/Extension Education
A minor in Adult/Extension Education requires AGED 4030, 4400, and nine additional credits selected from the following: AGED 4070, 4280, EDF (AGED) 4820, PRTM 3080.

### Aerospace Studies
A minor in Aerospace Studies requires AS 1090, 1100, 2090, 2100, 3090, 3100, 4090, and 4100. Completion of AS Leadership Laboratory and participation in cadet activities are mandatory. Students must compete for an allocation and be accepted into the Professional Officer Course before enrolling in AS 3090.

### Agricultural Business Management
A minor in Agricultural Business Management requires APEC 3020, 3090, 3190, and at least two courses selected from APEC 3080, 3510, 4020, 4090, 4520, 4560, 4600.

### Agricultural Mechanization and Business
A minor in Agricultural Mechanization and Business requires six credit hours selected from AGM 2050, 2060, 2210, 3010, 3030, AGED 3030; and nine credit hours selected from AGM 4020, 4050, 4060, 4100, 4520, 4560, 4720.

### American Sign Language Studies
A minor in American Sign Language Studies requires 15 credit hours in ASL at the 3000 or 4000 level.

### Animal and Veterinary Sciences
A minor in Animal and Veterinary Sciences requires AVS 1500 and 1510; one course selected from AVS 2000, 2010, 2030, 2040, 2060, 2090; and nine hours selected from any 3000- or 4000-level AVS courses. A maximum of three credits of AVS 3600, 4410, 4420, 4430 or 4910 may be used.

### Anthropology
A minor in Anthropology requires ANTH 2010 and at least six hours selected from ANTH 3010, 3310, (BIOL) 3510, LANG (ANTH) 3710. Nine additional hours may be selected from any other Anthropology course, but at least three hours must be from a 4000-level course. No more than three credits of ANTH 4960 may be counted toward the minor.

### Architecture
A minor in Architecture requires ARCH 1010, 4710, 4720, and DSGN 3700. ARCH 4710, 4720, and DSGN 3700 are only offered during the summer at study abroad locations.

### Art
A minor in Art requires ART 1030, 1510 or 1520; AAH 1010, 1020 or 2100; at least nine hours of ART or AAH courses at the 2000 level or above; and at least three hours of ART or AAH courses at the 3000 or 4000 level.

### Athletic Leadership
A minor in Athletic Leadership requires 17 credit hours arranged as follows: AL 3490, 3500, 3530, 3610, 3620, 3760, and one of the following: AL 3710, 3720, 3730, 3740, 3750, 3770. Students must complete a coaching internship or athletic administrative internship (AL 4000) with the approval of the Athletic Leadership Coordinator.

### Biochemistry
A minor in Biochemistry requires three credits of GEN 3000 or 3020, three credits of BCHM 3010 or 3050 and nine credits of 4000 level Biochemistry courses.

### Biological Sciences
A minor in Biological Sciences requires BIOL 1030/1050, 1040/1060, or BIOL 1100 and 1110 and 12 additional credits selected from BIOL courses at the 3000 level or above, BCHM 3050, GEN 3000, or MICRO 3050.

### Business Administration
A minor in Business Administration requires ACCT 2100, ECON 2110, 2120, FIN 3060, LAW 3220, MGT 2010, MKT 3010.

### Chemistry
A minor in Chemistry requires CH 1010, 1020, and 15 additional credits in Chemistry, at least nine of which must be at the 3000 or 4000 level, selected in consultation with the Department of Chemistry.

### Cluster
The Cluster minor allows students a somewhat wider choice of course materials than is possible with the conventional subject-matter minor. The general requirement for the Cluster minor is 15 credits in courses numbered higher than 3000, except where noted differently, chosen according to one of the plans below. Courses within the student’s major area may not be included in the Cluster minor.

### Communication Studies
A minor in Communication Studies requires completion of one of the following options:

- General—COMM 2100 (with a C or better) and 12 additional credits in communication studies, nine of which must be at the 3000-4000 level. Three hours at the 4000-level must be included.
- Sports Communication—COMM 2100 (with a C or better) and 12 additional credits in sports communication (choose from COMM 3240, 3250, 3260, 3270, 4250, 4260, 4270, or 4280). Three hours at the 4000 level must be included.

### Computer Science
A minor in Computer Science requires CPSC 2120 and 12 additional credits in computer science of which at least nine credits must be at the 3000 level or higher.

### Crop and Soil Environmental Science
A minor in Crop and Soil Environmental Science requires AGR 1040, CSEN 2020, and nine or more CSEN credits at the 3000 level or higher.

### Digital Production Arts
A minor in Digital Production Arts requires DPA 3070 and completion of one of the following options:

- Group I (for Architecture or Visual Arts majors)–DPA 4000, 4010 and six credits selected from CPSC 4040, 4050, and 4160.
- Group II (for Computer Science, Computer Engineering, and Computer Information Systems majors)–DPA 4020, 4030, and six credits selected from ART 2050, 2130, 4210, GC 1020, and 3400.
- Group III (for all other majors)–DPA 4000, 4010, 4020, and three credits selected from CPSC 4040, 4050, and 4160.

### East Asian Studies
A minor in East Asian Studies requires 15 credits of which at least six credits must be at the 4000 level, distributed as follows: three credits from Group I, six additional credits selected from Group I or from Group II, and six credits from Group III:

- Group I–CHIN (ANTH) 4180, HIST 3340, JAPN (ANTH) 4170, POSC 3720
- Group II–HIST 3300, 3330, PHIL (CHIN) 3120, (CHIN) 3130, POSC 4720, 4770, REL 3140, or any other approved courses selected from department list
- Group III–EAS 1230, JAPN 4010, 4990, any Chinese or Japanese language course, or any other approved courses selected from department list

Courses in Groups II and III must represent a combination of Chinese and Japanese courses.
Economics
A minor in Economics requires ECON 3140, 3150, and nine additional credits from economics courses numbered 3000 or higher.

Education
A minor in Education requires EDF 3010, 3020, 3340 or 3350, EDSP 3700, and three hours from any AL, CTE, EDC, NURS, PRMT, PHIL, POSC, PSYC, or SOC course at the 2000 level or higher. This minor does not meet the requirements for teacher certification and is not intended for persons who plan to teach in grades K–12.

English
A minor in English requires 15 credits in English above the sophomore level, arranged as follows:
- Shakespeare—ENGL 4110
- British—Three credits from ENGL 3960, 3970, 4070, 4080, 4100, 4140, 4150, 4160, 4170, 4180, 4330, 4340
- American—Three credits from ENGL 3980, 3990, 4200, 4210, 4250, 4260, 4550
- Electives—Six additional credits above the sophomore level, including at least three credits from the 4000 level

Entomology
A minor in Entomology requires ENT (BIOL) 3010 and 12 credits in entomology courses at the 3000 level or higher.

Entrepreneurship
A minor in Entrepreneurship consists of 15 credits including the following: ELE 3010 and MGT (ELE) 3150. Nine credit hours from the following courses are also required: ECON (ELE) 3210, ELE 4010, 4990, MGT 4970, MKT (ELE) 3140, MGT 4200, 4250, 4260, 4270, 4280, 4290, 4300, SOC (ELE, POSC, PSYC) 3560.

Note: Not open to business majors, except those pursuing a BA in Economics.

Environmental Engineering
A minor in Environmental Engineering requires at least 15 credits as follows: EES 4010, at least six credits selected from Group I, and at least three credits from Group II. The remaining three credits may be selected from either group. All courses are to be chosen in consultation with the Department of Environmental Engineering and Earth Sciences.

Group I—EES 4020, 4100, 4110, 4300, (BE) 4840, 4850, 4860
Group II—BE 3220, CE 3420, 4470, CH 2230, 4110, 4130, CHE 4010, 4500, CSEN (ETOX, GEOL) 4850, ENSP 2000, 4000, ETOX 4000, 4300, GEOL 4080, MIR 3050, 4100

Environmental Science and Policy
A minor in Environmental Science and Policy requires at least 18 credits including ENSP 2000, 4000, and at least 12 credits from the following:
- Group I—Science and Engineering: at least six credits selected from BIOL 4100, 4410, 4420, 4430, 4460, CH 4130, CSEN 2020, (BE) 4080, 4750, 4900, EES 4010, 4020, 4300, 4850, ENT 3000, ETOX 4000, 4210, 4300, FOR 2060, WFB 4140
- Group II—Resource Management: at least two credits selected from AGR (ENSP) 3150, BE 4640, CRD (APEO) 3570, CSEN 4040, ECON 3190, EES (BE) 4840, FOR 3150, 4060, GEOL 3000, MSE 4330, WFB 3060, (BIOL) 3130, 3500, 4120, 4620
- Group III—Environmental Policy and Social Impacts: at least two credits selected from ENSP 4720, HIST 3920, HLTH 4310, PHIL 3450, PSYC 3550, RS (SOC) 4010, WFB 4300

Equine Business
A minor in Equine Business requires AVS 1500, 1510, and 2040; three hours selected from any graded (not Pass/No Pass) 3000- or 4000-level AVS courses; and six hours selected from AVS 2080, 3090, 3850, 3860, 4120, or 4160.

Film Studies
A minor in Film Studies requires 15 credits in ENGL at or above the sophomore level, arranged as follows: ENGL 3520, 4500, (COMM) 4510, 4520; and one of the following: ART 2130, 3130, ENGL (THEA) 4300, ENGL 4530, 4590, 4830, or other course approved by the departmental Director of Undergraduate Studies.

Financial Management
A minor in Financial Management requires FIN 3050, 3070, 3080, 3110 and 3120.

Food Science
A minor in Food Science requires FDSC 2140, 4010, and nine additional credits in FDSC or NUTR courses numbered 3000 or higher.

Forest Products
A minor in Forest Products requires 15 credits, which must include at least four courses selected from FOR 3410, 4000, 4410, 4420, 4440, 4470. Other courses at the 3000 level or above may be selected with a Forest Products advisor’s approval.

Forest Resource Management
A minor in Forest Resource Management requires FOR 2050, 2060, 3050, and at least seven additional credits of forestry courses at the 3000 level or higher, excluding FOR 3000, 4000, 4190, 4470.

Genetics
A minor in Genetics requires three credits of GEN 3000 or 3020, three credits of BCHM 3010 or 3050, and nine credits of level Genetics courses.

Geography
The Geography minor consists of three credits of geography at the 1000 level and 15 credits of geography at the 3000 or 4000 level. At least one 4000-level geography course must be taken. One of the following courses may be taken as part of the 15-credit, upper-level requirements but may not be substituted for the required 4000-level geography course: BIOL 4420, SOC 4710.

Geology
A minor in Geology requires GEOL 1010/1030, 1020, and 12 additional credits in geology, at least nine of which must be drawn from 3000-4000-level geology courses.

Global Politics
A minor in Global Politics requires POSC 1020 or 1040, 3610; and 12 additional credits chosen from the list below. At least three of these credits must be from Group I and at least three credits from Group II:
- Group I—Comparative Politics: POSC 3710, 3720, 4660, 4710, 4720, 4730, 4760, 4770, 4780, (LANG) 4850
- Group II—International Relations: POSC 3620, 3630, 3670, 3750, 4230, 4290, 4560, 4570, 4590, 4610

With the approval of the Political Science department chair, a minimum of three credits from POSC 3050, 3110, 3130, (SPAN) 3820, (FR) 3830, or 4100 also may be applied toward a Global Politics minor. Students majoring in Political Science may not minor in Global Politics.

Great Works
The Great Works minor requires GW (ENGL) 3010 plus one course from each of the following groups. A minimum of nine credits must be at the 4000 level.
- Group I—Classical Civilization: Three credits from ENGL 4030, 4290, (COMM) 4910, HIST 3540, 3550, 4500, PHIL 3150
- Group II—Post-Classical Literature: Three credits from ENGL 4080, 4110, 4140, 4160, FR 4000, GW 4030, SPAN 3130, 4010
- Group III—Philosophy, Religion, and Social Thought: Three credits from ENGL 3500, HIST 4950, PHIL 3160, 3170, POSC 4500, REL 3010, 3020, 4010
- Group IV—The Arts: Three credits from AAH 4230, 4240, HUM 3010, 3020, MUSC 4150, 4160, THEA 3150, 3160
- Group V—The Sciences: BIOL 4860, ENGL 4340, GW 4020, 4050

History
A minor in History requires 15 credits in history at the 3000 and 4000 level. Three credits at the 4000 level must be included.

Horticulture
A minor in Horticulture requires HORT 1010 and 12 additional credits of horticulture courses (excluding HORT 4080 and 4710), nine credits of which must be at the 3000 level or higher. HORT 2710 is highly recommended.

Human Resource Management
A minor in Human Resource Management requires 15 credit hours, including MGT 3070, 4000, 4310 and 4350, and three additional credit hours selected from MGT 4160 or 4250.

International Engineering and Science
The minor in International Engineering and Science, open to students in any major in the College of Engineering and Science, requires
1. Completion of a foreign language through at least 2020 and
2. Either (a) nine credits of engineering or science courses at the 3000 level or higher transferred from a foreign institution during an approved study abroad program of at least three months duration, plus nine credits chosen from the following list: 3000-level or higher foreign language courses; ECON 3100, 4120, 4130; POSC 3610, 3620, 3710, 3750, 4720, 4770, 4780.
The international study, internship, or research program must be approved in advance by the Associate Dean for Undergraduate Studies of the College of Engineering and Science.

Legal Studies
A minor in Legal Studies requires 15 credits at the 3000–4000 level, with at least six credits selected from Group I, at least six credits selected from Group II, and the remaining three credits selected from either group at the student’s option:

Group I—HIST 3280, 3290, 4960, PHIL 3430, POSC 4370, 4380, SOC 3880
Group II—ECON 4020, LAW 3220, 3330, 4050, 4200, 4990

Additional courses may be approved by a committee composed of representatives selected by the Dean of the College of Architecture, Arts and Humanities and by the Dean of the College of Business and Behavioral Science.

Management
A minor in Management requires 15 credits as follows: MGT 2010, 3070, 3100, 3180, 3900.

Management Information Systems
A minor in Management Information Systems requires 15 credits as follows: ACCT 3220 or MGT 3180; MGT 4110, 4520, and two of the following: MGT 3120, 4540, 4550, 4560.

Mathematical Sciences
A minor in Mathematical Sciences requires MTHS 2080 and 12 additional credits in MTHS or EXST courses numbered 3000 or higher with the exception of 3010.

Microbiology
A minor in Microbiology requires MICR 3050 and 11 additional credits selected from 4000-level microbiology courses.

Military Leadership
A minor in Military Leadership requires at least 15 credits, including ML 3010, 3020, 4010, 4020, and one of the following: HIST 3900, ML 3900, POSC 4580, or POSC 6580. Completion of Leadership Laboratory and participation in cadet activities are mandatory. (ML 1000 and 2000 levels may be taken concurrently in the sophomore year.)

Modern Languages
A minor in Modern Languages requires 15 credits from one modern language (Chinese, French, German, Italian, Japanese, or Spanish) from courses at the 3000 and 4000 levels, including at least one literature course at the 4000 level. In French, one of the 3000-level courses must be FR 3050, FR 4380 and 4390, JAPN 4010, (ANTH) 4170, 4990, and SPAN 4380 and 4390 may not be used to satisfy requirements for the French, Japanese, or Spanish minor.

Music
A minor in Music requires MUSC 1420, 1430, 1510, 1520, 2510, 2520, 4150 or 4160; four semesters of ensemble, totaling four credits, selected from MUSC 3230, 360, 3620, 3630, 3690, 3700, 3710, 3720; and one three-hour MUSC course at the 3000–4000 level. All four semesters of applied music and large ensemble must be on the student’s primary instrument.

Natural Resource Economics
A minor in Natural Resource Economics requires APEC 4570; CRD (APEC) 3570; and three courses selected from APEC 3520, 4090, 4210, 4520, 4750, CRD (APEC) 4120, ECON 3910.

Nonprofit Leadership
A minor in Nonprofit Leadership requires NPL 3000, 3900, 4900, and one course selected from each of the following areas:
Group I—COMM 3480, 4800, PRTM 3080
Group II—EDF 3340, 3350, PSYC 3400, SOC 3500
Group III—HLTH 4010, MKT 4280, 4290, PRTM 4210
Group IV—MGMT 3070, POSC 4270, PSYC 3680
Group V—HLTH 4400, PHIL 3440, POSC 3210, PRTM 3050, 3210

Packaging Science
A minor in Packaging Science requires PKSC 1020, 2020, 2040, and 2060; and at least nine credits selected from the following: FDSC 4010, 4020, FOR 4410, 4420, GC 4060, PKSC 3200, 3680, 4010, 4040, 4160, 4200, 4300, 4400, 4540, 4640.

Pan African Studies
A minor in Pan African Studies requires 18 credits as follows: HIST 3110 or 3120, PAS 3010, and 12 credits arranged as follows:
Group I—Three credits from GEOG 3300, HIST 3370, 3380, 3390, 4380, PAS 1010, 4980
Group II—Three credits from ENGL 4820, 4830, POSC 3810, SOC 4600, THEA 3170
Group III—Three credits in any 3000–4000-level course in the social sciences approved by the Director of the Pan African Studies Program
Group IV—Three credits in any 3000–4000-level course in the humanities approved by the Director of the Pan African Studies Program

Courses are to be scheduled in consultation with the appropriate advisors. Pan African Studies advisors will provide all affected advisors with a list of approved courses prior to registration.

Park and Protected Area Management
A minor in Park and Protected Area Management requires PRTM 2700, 4740 and nine additional credits from PRTM 3200, 3210, 3300, 4030, GEOG 4300, 4310.

Philosophy
A minor in Philosophy requires 15 credits in philosophy, nine of which must be at the 3000 level or above.

Physics
A minor in Physics requires PHYS 1220, 2210, 2220, and nine additional credits in physics courses at the 3000 level or higher.

Plant Pathology
A minor in Plant Pathology requires PLPA 3100 and 12 credits from the following: BIOL (PLPA) 4250, (PLPA) 4260, IPM 4010, MICR 3050, or any 3000–4000-level PLPA courses.

Political Science
A minor in Political Science requires POSC 1010 or 1020 or 1030 or 1040 and 15 additional credits at the 3000–4000 level, nine of which must be selected from three different fields of political science as follows:
American Politics—POSC 4030, 4050, 4160, 4360, 4420
Comparative Politics—POSC 3710, 3720, 4660, 4710, 4760, 4770, 4780
International Relations—POSC 3610, 3620, 3630, 3750, 4290
Political Theory—POSC 4480, 4490, 4500, 4530, 4550
Public Policy and Public Administration—POSC 3020, 3210, 4210, 4230, 4240, 4270, 4300
At least one 4000-level course must be included. No more than a total of three credits from POSC 3050, 3100, 3110, 3120, 3130, 4090, 4100 may be applied to the requirements for a Political Science minor.

Psychology
A minor in Psychology requires PSYC 2010 and 15 credits from PSYC 2750 and/or 3000 and 4000-level psychology courses. At least nine hours from courses other than PSYC 4970 and 4980 must be taken.

Public Policy
A minor in Public Policy requires POSC 3210, 4210, and 4300, plus nine credit hours in courses dealing with specific policy domains and approved by the Department of Political Science.

Religion
A minor in Religion requires 15 credits, nine of which must be at the 3000 level or above. PHIL 3030 and POSC 4070 may be included.

Russian Area Studies
A minor in Russian Area Studies requires 15 credit hours of which three credits must be in Russian language courses at the 2000 level or above. The remaining twelve credits are distributed as follows:
Group I—Three credits from RUSS 3070, 3400, 3600, 3610, 3980, 4600
Group II—Three credits from HIST 3850, 3860, 3870, 4940
Group III—Three credits from POSC 4710, 4730
Group IV—Three additional credits from any of the courses listed above

Science and Technology in Society
A minor in Science and Technology in Society requires 15 credits, at least six of which must be at the 4000 level. See History Department advisor for list of approved courses.

Screenwriting
A minor in Screenwriting requires 15 credits in ENGL above the sophomore level as follows: ENGL 3570, 4480 (six credits); and one of the following: ENGL 4500, (COMM) 4510, 4520, 4530, THEA (ENGL) 3470, or other course approved by the departmental Director of Undergraduate Studies.

Sociology
A minor in Sociology requires SOC 2010 and 15 credits from sociology and rural sociology courses numbered 3000 or higher. At least one 4000-level course must be included.
**Spanish-American Area Studies**
A minor in Spanish-American Area Studies requires the equivalent of SPAN 2020, ECON 4100, and 12 credits distributed as follows: six credits from GEOG 3400, HIST 3400, 3410, 3420, 4400; and six credits from POSC (SPAN) 3820, SPAN 3080, 3110, 4030, 4220, 4350.

**Theatre**
A minor in Theatre requires 20 credits arranged as follows: three credits of dramatic literature and history (ENGL) 4100, 4110, 4290, 4300; THEA (ENGL) 3470; three credits of theatre history (THEA 3150, 3160, 3170, 3180); six credits in a sequence (THEA 2780/4790, THEA (ENGL) 3470/4470, THEA 3720/4720, 3760/4760; 2880 or 3770 and one of the following: 4770, 4870 or 4970); six credits in THEA at the 3000–4000 level; and two credits of THEA 2790.

**Therapeutic Recreation**
A minor in Therapeutic Recreation requires PRTM 3100, 3110, 4170, and at least two courses selected from PRTM 3170, 4160, 4180, 4200.

**Travel and Tourism**
A minor in Travel and Tourism requires PRTM 3010, 3420, and nine additional credits from PRTM 3430, 3440, 3490, 3920, 3980, (GEOG) 4300, 4410, 4440, 4450, 4460, 4470, 4980.

**Turfgrass**
A minor in Turfgrass requires CSEN 2020, HORT 2120, 4120, and two of the following: AGM 4020, HORT (CSEN) 4330, PLPA (ENT) 4060.

**Urban Forestry**
A minor in Urban Forestry requires a minimum of 16 credits, distributed as follows:
- **Group I—**FOR (HORT) 4270, 4500, 4800, HORT 2080
- **Group II—**A minimum of three credits selected from CRP 4010, HORT 3080
- **Group III—**A minimum of three credits selected from ENT 4010 or HORT 3030

**Wildlife and Fisheries Biology**
A minor in Wildlife and Fisheries Biology requires WFB 3000, 3500; and nine additional hours selected from 3000-level or higher WFB courses, except 4630.

**Women's Studies**
A minor in Women's Studies requires 15 credits at the 3000 and 4000 level, distributed as follows:
- **Group I—**Six credits: WS 3010 and any 4000-level WS course
- **Group II—**Six credits from courses that deal entirely with women and gender issues: COMM 4550, ENGL 3800, HIST 3180, PHIL (WS) 3490, PSYC 4080, SOC 4160, SPAN 4030, and any additional courses approved for Group II
- **Group III—**Three credits may be earned by taking any approved Women's Studies minor course.

Courses selected in Groups II and III must represent at least two disciplines. Courses are to be scheduled in consultation with the appropriate advisor. The Women's Studies Director will provide all affected advisors with a list of approved courses prior to registration each semester.

**Writing**
A minor in Writing requires 15 credits as follows:

- **Business and Technical Option—**APEC 3510 or GC 1040, CPSC 1200, ENGL 3040 or 3140, 4900, 4950
- **Media Studies Option—**ENGL 2310, 3320, 3330, 4780; and one of the following: ENGL 4750, 4890, (COMM) 4910, (COMM) 4920, or any course approved by the Chair of the English Department
- **Writing Pedagogy Option—**ENGL 3120, 4100, 4110, (EDSC) 4850, and any 3000- or 4000-level writing course offered by the Department of English

**Creative Writing Options**
- **Drama—**ENGL (THEA) 4300, THEA (ENGL) 3470, (ENGL) 4470 (six credits), and one of the following: ENGL 3120, 4100, 4110
- **Fiction—**ENGL 3450, 4320, 4450 (six credits), and one of the following: ENGL 3120, 4180, 4250, 4260, 4280
- **Poetry—**ENGL 3460, 4310, 4460 (six credits), and one of the following: ENGL 3120, 4160, 4170, 4280, 4440