# UNIVERSITY COURSE AND PROGRAMS COMMITTEE AGENDA 

December 15, 2006
2:30 PM
Upchurch Conference Room

1. Approval of minutes for November 17, 2006. Meeting minutes can be viewed at http://www.uark.edu/depts/gradinfo/dean/courseprog/minutes/index.html.
2. Consent Agenda (Course change proposals can be reviewed at https://www2.uark.edu/webapps/regr/ccf/Main or by going to the website of the Registrar and clicking on "Faculty/Staff" then "Curriculum Change Form," and then "View Changes Pending Before the University Course and Programs Committee.")
a. Undergraduate Courses (Table A)
b. Graduate Courses (Table B)
c. Dual Credit Courses (Table C)
d. Law Courses (Table D)
3. Old Business:
a. Tabled proposed program change for the Bumpers College of Agricultural, Food and Life Sciences (Table 1, Attachment 1A)
4. New Business:
a. Proposed program change for the Walton College of Business (Table 2, Attachment 2A)
b. Proposed program changes for the College of Engineering (Table 3, Attachments 3A-3H)
5. Other Items for Consideration: None

## TABLE A

Undergraduate Courses

| COLL | DEPARTMENT NAME | DEPT | CRSE <br> ALPHA | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE <br> DATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AFLS | Crop, Soil and Environmental Sciences | CSES | ENSC | 1001L | Environmental Science Laboratory | U | ANC | 1 | Fall 2007 |
| AFLS | Food Science | FDSC | FDSC | 2523 | Sanitation and Safety in Food | U | ANC | 3 | Fall 2007 |
| AFLS | Human Environmental Sciences | HESC | HESC | 2643 | Principles of Tourism | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4223 | Numerical Methods in Biomedical Engineering | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4903 | Ecological Engineering Principles to Watershed Eco-Hydrology | U | CT, CD | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1111L to } \\ & 2001 \mathrm{~L} \end{aligned}$ | Programming Foundations I Lab | U | CD, CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1113 \text { to } \\ 2003 \end{gathered}$ | Programming Foundations I | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1121L to } \\ & 2011 \mathrm{~L} \end{aligned}$ | Programming Foundations II Lab | U | CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} \text { 1121M to } \\ \text { 2011M } \end{gathered}$ | Honors Programming Foundations II Laboratory | U | CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1123 \text { to } \\ 2013 \end{gathered}$ | Programming Foundation II to Programming Foundations II | U | CT, CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1123 \mathrm{H} \text { to } \\ 2013 \mathrm{H} \end{gathered}$ | Honors Programming Foundations II | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 2143 \text { to } \\ 3143 \end{gathered}$ | Data Structures | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 390 V | Topics in Computer Science | U | ELC | variable | Fall 2007 |


| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 4013 | Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 4023H | Honors Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 490 V | Special Problems to Individual Study in Computer Science | U | CT, CD | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4003 | Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4013H | Honors Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 490 V | Special Problems to Individual Study in Computer Engineering | U | $C T, C D$ | variable | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | 1011 | Engineering Success and Ethics | U | ELC | 1 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | $\begin{gathered} 3143 \text { to } \\ 4143 \end{gathered}$ | Stochastic Signal Processing | U | CHN | 3 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | 3921 L | Microprocessor Systems Design Laboratory | U | ELC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1111 | Introduction to Engineering I | U | ANC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1121 | Introduction to Engineering II | U | ANC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1103 \text { to } \\ 2101 \end{gathered}$ | Principles of Industrial Engineering | U | $\mathrm{CHN}, \mathrm{CCH}$ | 3 to 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1403 \text { to } \\ 2403 \end{gathered}$ | Industrial Cost Analysis | U | CHN | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 2503 | Engineering Materials | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3213 | Safety Engineering | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3813H | Honors Product Integrity | U | ANC | 3 | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 399V | Special Problems | u | ELC | variable | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Industrial Engineering | INEG | INEG | 400VH | Honor's Thesis | u | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 410V | Special Problems to Special Topics in Industrial Engineering | u | CD, CT, OTH | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 411V | Individual Study in Industrial Engineering | U | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4121 | I.E. Seminar | U | ELC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4243 | Automated Manufacturing | u | ANC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4633 | Transportation Logistics | D to U | CEGUC, OTH | 3 | Fall 2007 |

## TABLE B

## Graduate Courses

| COLL | DEPARTMENT NAME | DEPT | $\begin{aligned} & \text { CRSE } \\ & \text { ALPHA } \end{aligned}$ | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE DATE |
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| AFLS | Food Science | FDSC | FDSC | 6323 | Nutraceutical and Functional Foods | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5273 | Numerical Methods in Biomedical Engineering | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5943 | Ecological Engineering Principles to Watershed Eco-Hydrology | G | CT | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5013 | Topics in Computer Hardware to Advanced Special Topics in Computer Engineering | G | $C T, C D$ | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 510 V to 590 V | Special Problems to Advanced Individual Study in Computer Engineering | G | CT, CD, CHN | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5801 | Seminar | G | ELC | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CSCE | 5013 | Advanced Special Topics in Computer Science | G | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | csce | 590 V | Advanced Topics in Computer Science to Advanced Individual Study in Computer Science | G | $C T, C D$ | variable | Fall 2007 |
| ENGR | Chemical Engineering | CHEG | CHEG | 5033 | Technical Administration | G | $C D$ | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 514 V | Research and Special Topics to Special Topics in Industrial Engineering | G | CD, CT | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 515 V | Individual Study in Industrial Engineering | G | ANC | variable | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 5243 | Automated Manufacturing | G | ANC | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENGR | Industrial Engineering | INEG | INEG | 5533 | Transportation Logistics | G | ANC | 3 |

TABLE C

## UCPC

| DEPT | CRSE | CRSE | CRSE TITLE | CREDIT <br> ALPHA | NUM |
| :--- | :---: | :---: | :--- | :---: | :---: | :---: | :---: | :---: | ACTION | CREDIT |
| :---: |
| EFFECTIVE |

## Table D

## Law Courses

| COLL | DEPARTMENT | DEPT | CRSE | CRSE | CRSE TITLE | CREDIT | ACTION | CREDIT EFFECTIVE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | NAME |  | ALPHA | NUM |  |  | LEVEL |  |
| LAWW | Department of Law | LAWD | LAWW | 5123 | Legislation | L | ELC | 3 |

KEY

| ACTION |  |
| :---: | :---: |
| ANC= | ADD NEW COURSE |
| ELC= | ELIMINATE COURSE |
| $\mathrm{CT}=$ | CHANGE TITLE |
| CD= | CHANGE DESCRIPTION |
| $\mathrm{CHN}=$ | CHANGE COURSE NUMBER FROM __TO |
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| CL= | CROSS LISTED |
| CEUDC= | CHANGE EXISTING UNDERGRADUATE COURSE TO DUAL CREDIT |
| CEUGC= | CHANGE EXISTING UNDERGRADUATE COURSE TO GRADUATE CREDIT |
| CEGUC= | CHANGE EXISTING DUAL/GRADUATE COURSE TO UNDERGRADUATE CREDIT |
| OTH= | OTHER |
| RA= | REACTIVATE COURSE |
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Undergraduate Courses

| COLL | DEPARTMENT NAME | DEPT | CRSE <br> ALPHA | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE <br> DATE |
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| AFLS | Crop, Soil and Environmental Sciences | CSES | ENSC | 1001L | Environmental Science Laboratory | U | ANC | 1 | Fall 2007 |
| AFLS | Food Science | FDSC | FDSC | 2523 | Sanitation and Safety in Food | U | ANC | 3 | Fall 2007 |
| AFLS | Human Environmental Sciences | HESC | HESC | 2643 | Principles of Tourism | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4223 | Numerical Methods in Biomedical Engineering | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4903 | Ecological Engineering Principles to Watershed Eco-Hydrology | U | CT, CD | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1111L to } \\ & 2001 \mathrm{~L} \end{aligned}$ | Programming Foundations I Lab | U | CD, CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1113 \text { to } \\ 2003 \end{gathered}$ | Programming Foundations I | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1121L to } \\ & 2011 \mathrm{~L} \end{aligned}$ | Programming Foundations II Lab | U | CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} \text { 1121M to } \\ \text { 2011M } \end{gathered}$ | Honors Programming Foundations II Laboratory | U | CHN | 1 | Fall 2007 |
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| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1123 \mathrm{H} \text { to } \\ 2013 \mathrm{H} \end{gathered}$ | Honors Programming Foundations II | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 2143 \text { to } \\ 3143 \end{gathered}$ | Data Structures | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 390 V | Topics in Computer Science | U | ELC | variable | Fall 2007 |


| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 4013 | Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 4023H | Honors Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 490 V | Special Problems to Individual Study in Computer Science | U | CT, CD | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4003 | Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4013H | Honors Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
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| ENGR | Electrical Engineering | ELEG | ELEG | 1011 | Engineering Success and Ethics | U | ELC | 1 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | $\begin{gathered} 3143 \text { to } \\ 4143 \end{gathered}$ | Stochastic Signal Processing | U | CHN | 3 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | 3921 L | Microprocessor Systems Design Laboratory | U | ELC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1111 | Introduction to Engineering I | U | ANC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1121 | Introduction to Engineering II | U | ANC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1103 \text { to } \\ 2101 \end{gathered}$ | Principles of Industrial Engineering | U | $\mathrm{CHN}, \mathrm{CCH}$ | 3 to 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1403 \text { to } \\ 2403 \end{gathered}$ | Industrial Cost Analysis | U | CHN | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 2503 | Engineering Materials | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3213 | Safety Engineering | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3813H | Honors Product Integrity | U | ANC | 3 | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 399V | Special Problems | u | ELC | variable | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Industrial Engineering | INEG | INEG | 400VH | Honor's Thesis | u | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 410V | Special Problems to Special Topics in Industrial Engineering | u | CD, CT, OTH | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 411V | Individual Study in Industrial Engineering | U | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4121 | I.E. Seminar | U | ELC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4243 | Automated Manufacturing | u | ANC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4633 | Transportation Logistics | D to U | CEGUC, OTH | 3 | Fall 2007 |

## TABLE B

## Graduate Courses

| COLL | DEPARTMENT NAME | DEPT | $\begin{aligned} & \text { CRSE } \\ & \text { ALPHA } \end{aligned}$ | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE DATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AFLS | Food Science | FDSC | FDSC | 6323 | Nutraceutical and Functional Foods | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5273 | Numerical Methods in Biomedical Engineering | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5943 | Ecological Engineering Principles to Watershed Eco-Hydrology | G | CT | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5013 | Topics in Computer Hardware to Advanced Special Topics in Computer Engineering | G | $C T, C D$ | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 510 V to 590 V | Special Problems to Advanced Individual Study in Computer Engineering | G | CT, CD, CHN | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5801 | Seminar | G | ELC | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CSCE | 5013 | Advanced Special Topics in Computer Science | G | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | csce | 590 V | Advanced Topics in Computer Science to Advanced Individual Study in Computer Science | G | $C T, C D$ | variable | Fall 2007 |
| ENGR | Chemical Engineering | CHEG | CHEG | 5033 | Technical Administration | G | $C D$ | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 514 V | Research and Special Topics to Special Topics in Industrial Engineering | G | CD, CT | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 515 V | Individual Study in Industrial Engineering | G | ANC | variable | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 5243 | Automated Manufacturing | G | ANC | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENGR | Industrial Engineering | INEG | INEG | 5533 | Transportation Logistics | G | ANC | 3 |

TABLE C

## UCPC

| DEPT | CRSE | CRSE | CRSE TITLE | CREDIT <br> ALPHA | NUM |
| :--- | :---: | :---: | :--- | :---: | :---: | :---: | :---: | :---: | ACTION | CREDIT |
| :---: |
| EFFECTIVE |

## Table D

## Law Courses

| COLL | DEPARTMENT | DEPT | CRSE | CRSE | CRSE TITLE | CREDIT | ACTION | CREDIT EFFECTIVE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | NAME |  | ALPHA | NUM |  |  | LEVEL |  |
| LAWW | Department of Law | LAWD | LAWW | 5123 | Legislation | L | ELC | 3 |

KEY

| ACTION |  |
| :---: | :---: |
| ANC= | ADD NEW COURSE |
| ELC= | ELIMINATE COURSE |
| $\mathrm{CT}=$ | CHANGE TITLE |
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| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5273 | Numerical Methods in Biomedical Engineering | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5943 | Ecological Engineering Principles to Watershed Eco-Hydrology | G | CT | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5013 | Topics in Computer Hardware to Advanced Special Topics in Computer Engineering | G | $C T, C D$ | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 510 V to 590 V | Special Problems to Advanced Individual Study in Computer Engineering | G | CT, CD, CHN | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5801 | Seminar | G | ELC | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CSCE | 5013 | Advanced Special Topics in Computer Science | G | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | csce | 590 V | Advanced Topics in Computer Science to Advanced Individual Study in Computer Science | G | $C T, C D$ | variable | Fall 2007 |
| ENGR | Chemical Engineering | CHEG | CHEG | 5033 | Technical Administration | G | $C D$ | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 514 V | Research and Special Topics to Special Topics in Industrial Engineering | G | CD, CT | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 515 V | Individual Study in Industrial Engineering | G | ANC | variable | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 5243 | Automated Manufacturing | G | ANC | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENGR | Industrial Engineering | INEG | INEG | 5533 | Transportation Logistics | G | ANC | 3 |

TABLE C

## UCPC

| DEPT | CRSE | CRSE | CRSE TITLE | CREDIT <br> ALPHA | NUM |
| :--- | :---: | :---: | :--- | :---: | :---: | :---: | :---: | :---: | ACTION | CREDIT |
| :---: |
| EFFECTIVE |

## Table D

## Law Courses

| COLL | DEPARTMENT | DEPT | CRSE | CRSE | CRSE TITLE | CREDIT | ACTION | CREDIT EFFECTIVE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | NAME |  | ALPHA | NUM |  |  | LEVEL |  |
| LAWW | Department of Law | LAWD | LAWW | 5123 | Legislation | L | ELC | 3 |

KEY

| ACTION |  |
| :---: | :---: |
| ANC= | ADD NEW COURSE |
| ELC= | ELIMINATE COURSE |
| $\mathrm{CT}=$ | CHANGE TITLE |
| CD= | CHANGE DESCRIPTION |
| $\mathrm{CHN}=$ | CHANGE COURSE NUMBER FROM __TO |
| CCH= | CHANGE CREDIT HOURS FROM _TO |
| CL= | CROSS LISTED |
| CEUDC= | CHANGE EXISTING UNDERGRADUATE COURSE TO DUAL CREDIT |
| CEUGC= | CHANGE EXISTING UNDERGRADUATE COURSE TO GRADUATE CREDIT |
| CEGUC= | CHANGE EXISTING DUAL/GRADUATE COURSE TO UNDERGRADUATE CREDIT |
| OTH= | OTHER |
| RA= | REACTIVATE COURSE |
| $\mathrm{IN}=$ | INACTIVATE COURSE |

## TABLE A

Undergraduate Courses

| COLL | DEPARTMENT NAME | DEPT | CRSE <br> ALPHA | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE <br> DATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AFLS | Crop, Soil and Environmental Sciences | CSES | ENSC | 1001L | Environmental Science Laboratory | U | ANC | 1 | Fall 2007 |
| AFLS | Food Science | FDSC | FDSC | 2523 | Sanitation and Safety in Food | U | ANC | 3 | Fall 2007 |
| AFLS | Human Environmental Sciences | HESC | HESC | 2643 | Principles of Tourism | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4223 | Numerical Methods in Biomedical Engineering | U | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 4903 | Ecological Engineering Principles to Watershed Eco-Hydrology | U | CT, CD | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1111L to } \\ & 2001 \mathrm{~L} \end{aligned}$ | Programming Foundations I Lab | U | CD, CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1113 \text { to } \\ 2003 \end{gathered}$ | Programming Foundations I | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{aligned} & \text { 1121L to } \\ & 2011 \mathrm{~L} \end{aligned}$ | Programming Foundations II Lab | U | CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} \text { 1121M to } \\ \text { 2011M } \end{gathered}$ | Honors Programming Foundations II Laboratory | U | CHN | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1123 \text { to } \\ 2013 \end{gathered}$ | Programming Foundation II to Programming Foundations II | U | CT, CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 1123 \mathrm{H} \text { to } \\ 2013 \mathrm{H} \end{gathered}$ | Honors Programming Foundations II | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | $\begin{gathered} 2143 \text { to } \\ 3143 \end{gathered}$ | Data Structures | U | CHN | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 390 V | Topics in Computer Science | U | ELC | variable | Fall 2007 |


| ENGR | Computer Science \& Computer Engineering | CSCE | CSCE | 4013 | Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 4023H | Honors Special Topics in Computer Science | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | csce | 490 V | Special Problems to Individual Study in Computer Science | U | CT, CD | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4003 | Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 4013H | Honors Special Topics in Computer Engineering | U | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | CSCE | CENG | 490 V | Special Problems to Individual Study in Computer Engineering | U | $C T, C D$ | variable | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | 1011 | Engineering Success and Ethics | U | ELC | 1 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | $\begin{gathered} 3143 \text { to } \\ 4143 \end{gathered}$ | Stochastic Signal Processing | U | CHN | 3 | Fall 2007 |
| ENGR | Electrical Engineering | ELEG | ELEG | 3921 L | Microprocessor Systems Design Laboratory | U | ELC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1111 | Introduction to Engineering I | U | ANC | 1 | Fall 2007 |
| ENGR | Department of Engineering Dean | ENGD | GNEG | 1121 | Introduction to Engineering II | U | ANC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1103 \text { to } \\ 2101 \end{gathered}$ | Principles of Industrial Engineering | U | $\mathrm{CHN}, \mathrm{CCH}$ | 3 to 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | $\begin{gathered} 1403 \text { to } \\ 2403 \end{gathered}$ | Industrial Cost Analysis | U | CHN | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 2503 | Engineering Materials | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3213 | Safety Engineering | U | ELC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 3813H | Honors Product Integrity | U | ANC | 3 | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 399V | Special Problems | u | ELC | variable | Fall 2007 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENGR | Industrial Engineering | INEG | INEG | 400VH | Honor's Thesis | u | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 410V | Special Problems to Special Topics in Industrial Engineering | u | CD, CT, OTH | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 411V | Individual Study in Industrial Engineering | U | ANC | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4121 | I.E. Seminar | U | ELC | 1 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4243 | Automated Manufacturing | u | ANC | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 4633 | Transportation Logistics | D to U | CEGUC, OTH | 3 | Fall 2007 |

## TABLE B

## Graduate Courses

| COLL | DEPARTMENT NAME | DEPT | $\begin{aligned} & \text { CRSE } \\ & \text { ALPHA } \end{aligned}$ | CRSE <br> NUM | CRSE TITLE | CREDIT LEVEL | ACTION | CREDIT HOURS | EFFECTIVE DATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AFLS | Food Science | FDSC | FDSC | 6323 | Nutraceutical and Functional Foods | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5273 | Numerical Methods in Biomedical Engineering | G | ANC | 3 | Fall 2007 |
| AFLS | Biological \& Agricultural Engineering | BAEG | BENG | 5943 | Ecological Engineering Principles to Watershed Eco-Hydrology | G | CT | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5013 | Topics in Computer Hardware to Advanced Special Topics in Computer Engineering | G | $C T, C D$ | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 510 V to 590 V | Special Problems to Advanced Individual Study in Computer Engineering | G | CT, CD, CHN | variable | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CENG | 5801 | Seminar | G | ELC | 1 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | CSCE | 5013 | Advanced Special Topics in Computer Science | G | ANC | 3 | Fall 2007 |
| ENGR | Computer Science \& Computer Engineering | csce | csce | 590 V | Advanced Topics in Computer Science to Advanced Individual Study in Computer Science | G | $C T, C D$ | variable | Fall 2007 |
| ENGR | Chemical Engineering | CHEG | CHEG | 5033 | Technical Administration | G | $C D$ | 3 | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 514 V | Research and Special Topics to Special Topics in Industrial Engineering | G | CD, CT | variable | Fall 2007 |
| ENGR | Industrial Engineering | INEG | INEG | 515 V | Individual Study in Industrial Engineering | G | ANC | variable | Fall 2007 |


| ENGR | Industrial Engineering | INEG | INEG | 5243 | Automated Manufacturing | G | ANC | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENGR | Industrial Engineering | INEG | INEG | 5533 | Transportation Logistics | G | ANC | 3 |

TABLE C

## UCPC

| DEPT | CRSE | CRSE | CRSE TITLE | CREDIT <br> ALPHA | NUM |
| :--- | :---: | :---: | :--- | :---: | :---: | :---: | :---: | :---: | ACTION | CREDIT |
| :---: |
| EFFECTIVE |

## Table D

## Law Courses

| COLL | DEPARTMENT | DEPT | CRSE | CRSE | CRSE TITLE | CREDIT | ACTION | CREDIT EFFECTIVE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | NAME |  | ALPHA | NUM |  |  | LEVEL |  |
| LAWW | Department of Law | LAWD | LAWW | 5123 | Legislation | L | ELC | 3 |

KEY

| ACTION |  |
| :---: | :---: |
| ANC= | ADD NEW COURSE |
| ELC= | ELIMINATE COURSE |
| $\mathrm{CT}=$ | CHANGE TITLE |
| CD= | CHANGE DESCRIPTION |
| $\mathrm{CHN}=$ | CHANGE COURSE NUMBER FROM __TO |
| CCH= | CHANGE CREDIT HOURS FROM _TO |
| CL= | CROSS LISTED |
| CEUDC= | CHANGE EXISTING UNDERGRADUATE COURSE TO DUAL CREDIT |
| CEUGC= | CHANGE EXISTING UNDERGRADUATE COURSE TO GRADUATE CREDIT |
| CEGUC= | CHANGE EXISTING DUAL/GRADUATE COURSE TO UNDERGRADUATE CREDIT |
| OTH= | OTHER |
| RA= | REACTIVATE COURSE |
| $\mathrm{IN}=$ | INACTIVATE COURSE |

## University Course and Programs Committee <br> 15-Dec-06

## TABLE ONE <br> Bumpers College of Agricultural, Food and Life Sciences

School of Human Environmental Sciences

FHNHBS - Food, Human Nutrition, and Hospitality - Attachment 1A
Proposal adds course HESC 2643 as a requirement and reduces the hours of general electives as specified in Section $\vee$ of the attachment.

## TABLE TWO

Walton College of Business

## Department of Economics

BECOBS - Economics - Attachment 2A
Proposal changes the AP Score requirements for receiving course credit for ECON 2013 and ECON 2023 as specified in Section V of the attachment.

## TABLE THREE

## College of Engineering

## General Engineering

GNEG - General Engineering - Attachment 3A
Proposal creates a common first-year experience for students pursuing a BS degree in several majors as specified in Section V of the attachment.

Department of Biological and Agricultural Engineering

BENGBS - Biological Engineering - Attachment 3B
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Civil Engineering

CVEGBS - Civil Engineering - Attachment 3C
Proposal allows the curriculum to conform to the new first-year experience program as specified in the attachment.

## PAGE TWO

## TABLE THREE (CONTINUED)

## College of Engineering

Department of Computer Science and Computer Engineering

CENGBS - Computer Engineering - Attachment 3D
Proposal requests seven curriculum changes as specified in Section V of the attachment.

CSCEBS - Computer Science - Attachment 3E
Proposal requests seven curriculum changes as specified in Section V of the attachment.

Department of Electrical Engineering

ELEGBS - Electrical Engineering - Attachment 3F
Proposal requests four curriculum changes as specified in Section V of the attachment.

Department of Industrial Engineering

INEGBS - Industrial Engineering - Attachment 3G
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Mechanical Engineering

MEEGBS - Mechanical Engineering - Attachment 3H
Proposal requests eleven curriculum changes as specified in
Section V of the attachment.

## ATTACHMENT 1A ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

## SECTION I: Approvals

| Department / Program Chair | Date Submitted |
| :--- | :--- |
| College Dean | Date |
| University Course and Programs Committee | Date |
| Graduate Council Chair | Date |


| Faculty Senate Chair | Date |
| :--- | :---: |
| Provost | Date |
| Board of Trustees Approval/Notification Date |  |
| Arkansas Higher Education Coordinating Board Approval/Notification Date |  |

SECTION II: Profile Data - Required Information and Name Change Information


Proposed Name
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).
## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$
Allow students in program to complete under this program until Term: $\qquad$ Year: $\qquad$
SECTION V: Proposed Changes to an Existing Program
Insert here a statement of the exact changes to be made: Adding a course to concentration $C$ of the FHNH area curriculum. The course being added is Principles of Tourism, HESC 2643. General Electives will be reduced from 8-18 hours to 5-15 hours.

## HESC 2643 Principles of Tourism.

Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
1622.20A p/vcaa 2/23/06 IV.)Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
Tourism has been added as a component of the hospitality management curriculum. This entry level course will provide students with basic elements of tourism management and the foundations of the tourism industry. This course will better prepare students for jobs in all areas of the hospitality industry.

## SECTION VII: Catalog Text and Format

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section $V$ will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.
Old Catalog Copy: (tracking feature did not work)

Food, Human Nutrition,<br>and Hospitality (FHNH)<br>Janet M. Noble<br>Area Coordinator<br>215 Home Economics Bldg.<br>479-575-4700<br>The curriculum in Food, Human Nutrition, and Hospitality allows students to prepare for a career in a specialized area of foods and nutrition by completing a common set of basic courses and one of the concentrations:<br>A: Dietetics (DIET)<br>B: General Human Nutrition (GHNU), and<br>C: Hospitality and Restaurant Management (HRMN).<br>Interest and aptitude for the biological and physical sciences that support<br>nutrition science are needed to complete concentrations in Dietetics<br>and General Human Nutrition successfully. Hospitality and Restaurant<br>Management is the best choice for those students who have an interest<br>in management and who enjoy working with people.<br>1622.20A p/vcaa 2/23/06

Dietetics (DIET)
Dietetics is for the student who intends to become a registered dietitian (RD). Courses required include those necessary as prerequisites to a dietetic internship. An internship is required for eligibility to take the national registration examination and for eligibility for licensure. Students who complete the program with a minimum grade-point average of 3.0 may apply for an internship. Upon licensure, students practice as registered dietitians in the health care field or as consulting dietitians in private practice, sports nutrition, or in wellness and health maintenance centers. Students with lower GPAs may apply for supervised practice programs leading to the dietetic technician registered (DTR) certification.
Dietetics Degree Requirements
English/Communications (12-15 hours)
English University Core Courses (6 hours)
COMM 1313 Fundamentals of Communication
ENGL 2003 Advanced Composition or Exemption Elective

- See page 41 for exemption information

ENGL 3053 Technical and Report Writing or JOUR 3123
Feature Writing or AGED 3142/3141L Agri Communications
with lab
Mathematics University Core Course (3 hours)
MATH 1203 College Algebra or MATH 1213 Plane Trigonometry
Science University Core Courses and Departmental Requirements
(24-27 hours)
CHEM 1103/1101L University Chemistry I with lab and CHEM
1123/1121L University Chemistry II with lab
BIOL 1543/1541L Principles of Biology with lab and
ANSC 3032 Animal Physiology I and ANSC 3042 Animal
Physiology II
CHEM 2613/2611L Organic Physiological Chemistry with lab
CHEM 3813 Organic Chemistry II
BIOL 2013/2011L General Microbiology with lab
Fine Arts/Humanities University Core Courses ( 6 hours)
Select 3 hours from "State Minimum Arts/Humanities Core"
(sections b, c, or d) - See page 40
US History University Core Course ( 3 hours)
Social Sciences University Core Courses (9 hours)
HESC 2413 Family Relations
PSYC 2003 General Psychology
Social Science University Core Elective (3 hours)
DIET Major Requirements:
Physical Education (2 hours)
Human Environmental Sciences ( 50 hours)
HESC 1201 Introduction to Dietetics and Nutrition
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 3203 Nutrition for Health Professionals and Educators
HESC 3213 Dietetic and Nutrition Practice: Tools
\&Applications
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management
HESC 4103 Experimental Foods
HESC 4213 Advanced Nutrition
HESC 4223 Nutrition During the Life Cycle
HESC 4243 Community Nutrition
HESC 425V Food and Nutrition Seminar (1 hour)
AGST 4023 Principles of Experimentation or Equivalent
Elective
HESC 4264/4260L Medical Nutrition Therapy I with lab

HESC 4273 Medical Nutrition Therapy II
HESC 4613 Food Service Purchasing
HESC 4623 Selection and Layout of Food Service Equipment
General Electives (9-15 hours)
Recommend:
HESC 2203 Nutrition for Exercise \& Sport
KINS 3153 Exercise Physiology
PHIL 2103 Introduction to Ethics
ARTS 1313 Two Dimensional Design

## 124 Total Hours

General Foods and Nutrition (GFNU)
Students taking this concentration are encouraged to select an
approved minor from the Bumpers, Walton, or Fulbright colleges or plan other combinations of courses to prepare for non-traditional vocations including work in community or government sponsored programs, wellness and health maintenance centers, public relations in the food industry, TV/media outlets for food and nutrition information, and international food or nutritional programs.
General Foods \& Nutrition Requirements:
English/Communications (12-15 hours)
English University Core courses ( 6 hours)
ENGL 2003 Advanced Composition or Exemption Elective

- See page 41 for exemption information

COMM 1313 Fundamentals of Communication
Communication Intensive Elective - ENGL 3053 Technical and
Report Writing or JOUR 3123 Feature Writing or
AGED 3142/3141L Agri Communications with lab
Mathematics University Core Course (3 hours)
Science University Core Courses and Departmental Requirements
(27 hours)
CHEM 1103/1101L University Chemistry I with lab
CHEM 1123/1121L University Chemistry II with lab
CHEM 2613/2611L Organic Physiological Chemistry with lab
CHEM 3813 Introduction to Biochemistry
BIOL 2013/2011L General Microbiology with lab
Select either: BIOL 2213/2211L Human Physiology with lab
and BIOL 2443/2441L Human Anatomy with lab
or BIOL 1543/1541L Principles of Biology with lab and
ANSC 3032 Animal Physiology I and ANSC 3042 Animal
Physiology II
Fine Arts/Humanities University Core Courses (6 hours)
Select in two categories from "State Minimum Arts/Humanities
Core" (sections a, b, c, or d) - See page 40
US History University Core Course ( 3 hours)
Social Sciences University Core Courses (9 hours)
PSYC 2003 General Psychology
HESC 2413 Family Relations
Select a 3-hr economic course from "State Minimum Core"

- See page 40

GFNU Major Requirements (37-39 hours)
HESC 1201 Introduction to Dietetics and Nutrition or HESC
1603 Introduction to Hospitality Management
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 2203 Nutrition for Exercise and Sport
HESC 3203 Nutrition for Health Professionals and Educators
HESC 3213 Dietetic and Nutrition Practices: Tools and
Applications
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management

HESC 4103 Experimental Foods
HESC 4213 Advanced Nutrition
HESC 4223 Nutrition During the Life Cycle
HESC 4243 Community Nutrition
HESC 425V Food and Nutrition Seminar (1 hour)
Physical Education (2 hours)
General Electives (20-25 hours)
124 Total Hours
Hospitality and Restaurant Management (HRMN): Students
in the hospitality and restaurant management concentration prepare themselves for managerial positions in the restaurant and hospitality industry. This dynamic curriculum provides students with skills in foods and business, as well as hospitality and restaurant management. Students have the opportunity to manage and operate a restaurant on campus. Students obtain hands-on experience by completing 1,000 hours of satisfactory, verifiable work experience in the hospitality and restaurant industry, usually completed during the summer and on part-time jobs during the school year. This noncredit work experience must be completed prior to graduation. A management internship, which allows students to acquire practical management experience and specialized knowledge from supervised work in a hotel, restaurant, or other hospitality-related business, is also part of this degree. Students in this program can complete a minor in business.
Hospitality and Restaurant Management Degree Requirements: English/Communications (12-15 hours)
English University Core courses ( 6 hours)
ENGL 2003 Advanced Comp or Exemption Elective - See page 41 for exemption information
COMM 1313 Fundamentals of Communication
Communication Intensive Course - AGED 3142/3141L Agri
Communications with lab
Mathematics University Core Course ( 3 hours) and
WCOB 1120 Computer Competency Requirement or Equivalent Science University Core Courses and Departmental Requirements (8-9 hours)
University Core CHEM 1103/1101L University Chemistry I
with lab and
University Core CHEM 1123/1121L University Chemistry II
with lab or
BIOL 1543/1541L Principles of Biology with lab and
CHEM 1074/1071L Fundamentals of Chemistry with lab
Fine Arts/Humanities University Core Courses (6 hours)
Select in two categories from "State Minimum Arts/Humanities
Core" (sections a, b, c, or d) - See page 40
US History University Core Course (3 hours)
Social Sciences University Core Courses (9 hours)
PSYC 2003 General Psychology
HESC 2413 Family Relations
ECON 2143 Basic Economics
HRMN Major Requirements (17 hours)
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management
HESC 4103 Experimental Foods
Additional Requirements (46-52 hours)
HESC 1601 Work Experience Practicum (1-4 hours)
HESC 1603 Introduction to Hospitality and Restaurant
Management
HESC 2123 Catering Management with lab

HESC 2623 Legal Issues in Hospitality Industry with lab or
Equivalent
HESC 2633 Introduction to Hotel Operations
HESC 3613 Resort Management
HESC 3633 Front Office Management
HESC 4613 Food Service Purchasing
HESC 4623 Selection and Layout of Food Service Equipment
HESC 4633 Advanced Hotel Operations
HESC 4643 Convention and Meeting Management
HESC 4653 Global Travel and Tourism Management
HESC 4693 Hospitality Management Internship (3-6 hours)
FDSC 2503 Food Safety/Sanitation
AGEC 2143 Ag Financial Records or Equivalent
AGEC 3303 Food \& AG Marketing or Equivalent
Physical Education (2 hours)
General Electives (8-18 hours) - Recommend foreign language (6
hours), HLSC 3633 First Responder-First Aid
124 Total Hours
Food, Human Nutrition and Hospitality Eight-Semester Degree

## Program

Students wishing to follow the degree plan in Food, Human
Nutrition and Hospitality should see page 42 in the Academic
Regulations section for university requirements of the program. The
Food, Human Nutrition and Hospitality major has three concentrations:
Dietetics; General Human Nutrition, and Hospitality and Restaurant
Management. Specific courses for all concentrations are available in
Section 2 of the Catalog of Studies, available at http://catalogofstudies.
uark.edu. A description of HESC courses is listed on page 358.
Dietetics Concentration
Fall Semester 1
4 CHEM 1103/1101L University Chemistry I with lab
3 MATH 1203 College Algebra or MATH 1213 Plane
Trigonometry
1 HESC 1501 Orientation to HESC
1 HESC 1201 Introduction to Dietetics \& Nutrition
3 HESC 1213 Nutrition in Health
3 ENGL 1013 Composition I
1 PEAC or DEAC Elective
16 semester hours
Spring Semester 1
4 CHEM 1123/1121L University Chemistry II with lab
3 ENGL 1023 Composition II
4 BIOL 1543/1541L Principles of Biology with lab
3 Elective - Rec: HESC 2203 Nutrition for Exercise and Sport or
Elective
3 Fine Arts \& Humanities University Core
17 semester hours
Fall Semester 2
3 HESC 2112/211L Foods I
2 ANSC 3032 Animal Physiology I
3 PSYC 2003 General Psychology
3 ENGL 2003 Advanced Composition or Exemption Elective
3 COMM 1313 Fundamentals of Communication
1 PEAC or DEAC
15 semester hours
Spring Semester 2
4 CHEM 2613/ 2611L Organic Physiological Chemistry
3 HESC 2413 Family Relations
2 ANSC 3042 Animal Physiology II
3 HESC 3203 Nutrition for the Health Professional \& Educator
3 Fine Arts \& Humanities University Core
1622.20A p/vcaa 2/23/06

## 15 semester hours

Fall Semester 3
3 CHEM 3813 Organic Chemistry II
4 HESC 3604/3600L Food Preparation for the Hospitality Industry with lab
3 HESC 3213 Dietetic \& Nutrition Practices
3 HESC 3653 Food Systems Management
3 General Elective
16 semester hours
Spring Semester 3
4 BIOL 2013/2011L Microbiology with lab (BIOL 1543/1541L
and 2 semesters of general chemistry)
3 Communications Intensive Elective: ENGL 3053 Technical
and Report Writing, JOUR 3123 Feature Writing or AGED
3142/3141L Agri Communications
3 AGST 4023 Principles of Experimentation or Equivalent
Elective
3 HESC 4103/4100L Experimental Foods with lab
3 US History University Core Elective
16 semester hours
Fall Semester 4
3 HESC 4213 Advanced Nutrition
3 HESC 4613 Food Service Purchasing
4 HESC 4264/4260L Medical Nutrition Therapy I
3 HESC 4223 Nutrition During the Life Cycle
3 Social Science Core Elective
16 semester hours
Spring Semester 4
3 HESC 4273 Medical Nutrition Therapy II
3 HESC 4623 Selection \& Layout of Food Service Equipment
1 HESC 425V Food and Nutrition Seminar
3 HESC 4243 Community Nutrition.
3 General Elective
13 semester hours
124 Total Hours

## New Catalog Copy:

Food, Human Nutrition,
and Hospitality (FHNH)
Mariorie E. Fitch-Hilgenberg
Area Coordinator
$\underline{24}$ Home Economics Bldg.
479-575-6815
The curriculum in Food, Human Nutrition, and Hospitality allows students to prepare for a career in a specialized area of foods and nutrition by completing a common set of basic courses and one of the concentrations:

A: Dietetics (DIET)
B: General Human Nutrition (GHNU), and
C: Hospitality and Restaurant Management (HRMN).
Interest and aptitude for the biological and physical sciences that support nutrition science are needed to complete concentrations in Dietetics and General Human Nutrition successfully. Hospitality and Restaurant Management is the best choice for those students who have an interest
in management and who enjoy working with people.
Concentration A: Dietetics (DIET)
Dietetics is for the student who intends to become a registered dietitian (RD). Courses required include those necessary as prerequisites to a dietetic internship. An internship is required for eligibility to take the national registration examination and for eligibility for licensure. Students who complete the program with a minimum grade-point average of 3.0 may apply for an internship. Upon licensure, students practice as registered dietitians in the health care field or as consulting dietitians in private practice, sports nutrition, or in wellness and health maintenance centers. Students with lower GPAs may apply for supervised practice programs leading to the dietetic technician registered (DTR) certification.

Dietetics Degree Requirements
English/Communications (12-15 hours)
English University Core Courses ( 6 hours)
COMM 1313 Fundamentals of Communication
ENGL 2003 Advanced Composition or Exemption Elective

- See page 41 for exemption information

ENGL 3053 Technical and Report Writing or JOUR 3123
Feature Writing or AGED 3142/3141L Agri Communications with lab
Mathematics University Core Course (3 hours)
MATH 1203 College Algebra or MATH 1213 Plane Trigonometry
Science University Core Courses and Departmental Requirements
(24-27 hours)
CHEM 1103/1101L University Chemistry I with lab and CHEM
1123/1121L University Chemistry II with lab
BIOL 1543/1541L Principles of Biology with lab and
ANSC 3032 Animal Physiology I and ANSC 3042 Animal
Physiology II
CHEM 2613/2611L Organic Physiological Chemistry with lab
CHEM 3813 Organic Chemistry II
BIOL 2013/2011L General Microbiology with lab
Fine Arts/Humanities University Core Courses (6 hours)
Select 3 hours from "State Minimum Arts/Humanities Core"
(sections b, c, or d) - See page 40
US History University Core Course (3 hours)
Social Sciences University Core Courses ( 9 hours)
HESC 2413 Family Relations
PSYC 2003 General Psychology
Social Science University Core Elective (3 hours)
DIET Major Requirements:
Physical Education (2 hours)
Human Environmental Sciences ( 50 hours)
HESC 1201 Introduction to Dietetics and Nutrition
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 3203 Nutrition for Health Professionals and Educators
HESC 3213 Dietetic and Nutrition Practice: Tools
\&Applications
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management
HESC 4103 Experimental Foods
HESC 4213 Advanced Nutrition
HESC 4223 Nutrition During the Life Cycle
HESC 4243 Community Nutrition
HESC 425V Food and Nutrition Seminar (1 hour)

AGST 4023 Principles of Experimentation or Equivalent
Elective
HESC 4264/4260L Medical Nutrition Therapy I with lab
HESC 4273 Medical Nutrition Therapy II
HESC 4613 Food Service Purchasing
HESC 4623 Selection and Layout of Food Service Equipment
General Electives (9-15 hours)

## Recommend:

HESC 2203 Nutrition for Exercise \& Sport
KINS 3153 Exercise Physiology
PHIL 2103 Introduction to Ethics
ARTS 1313 Two Dimensional Design
124 Total Hours
Concentration B: General Foods and Nutrition (GFNU)
Students taking this concentration are encouraged to select an approved minor from the Bumpers, Walton, or Fulbright colleges or plan other combinations of courses to prepare for non-traditional vocations including work in community or government sponsored programs, wellness and health maintenance centers, public relations in the food industry, TV/media outlets for food and nutrition information, and international food or nutritional programs.
General Foods \& Nutrition Requirements:
English/Communications (12-15 hours)
English University Core courses (6 hours)
ENGL 2003 Advanced Composition or Exemption Elective

- See page 41 for exemption information

COMM 1313 Fundamentals of Communication
Communication Intensive Elective - ENGL 3053 Technical and
Report Writing or JOUR 3123 Feature Writing or
AGED 3142/3141L Agri Communications with lab
Mathematics University Core Course (3 hours)
Science University Core Courses and Departmental Requirements
(27 hours)
CHEM 1103/1101L University Chemistry I with lab
CHEM 1123/1121L University Chemistry II with lab
CHEM 2613/2611L Organic Physiological Chemistry with lab
CHEM 3813 Introduction to Biochemistry
BIOL 2013/2011L General Microbiology with lab
Select either: BIOL 2213/2211L Human Physiology with lab
and BIOL 2443/2441L Human Anatomy with lab
or BIOL 1543/1541L Principles of Biology with lab and
ANSC 3032 Animal Physiology I and ANSC 3042 Animal
Physiology II
Fine Arts/Humanities University Core Courses (6 hours)
Select in two categories from "State Minimum Arts/Humanities
Core" (sections a, b, c, or d) - See page 40
US History University Core Course ( 3 hours)
Social Sciences University Core Courses (9 hours)
PSYC 2003 General Psychology
HESC 2413 Family Relations
Select a 3-hr economic course from "State Minimum Core"

- See page 40

GFNU Major Requirements (37-39 hours)
HESC 1201 Introduction to Dietetics and Nutrition or HESC
1603 Introduction to Hospitality Management
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 2203 Nutrition for Exercise and Sport
HESC 3203 Nutrition for Health Professionals and Educators

HESC 3213 Dietetic and Nutrition Practices: Tools and
Applications
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management
HESC 4103 Experimental Foods
HESC 4213 Advanced Nutrition
HESC 4223 Nutrition During the Life Cycle
HESC 4243 Community Nutrition
HESC 425V Food and Nutrition Seminar (1 hour)
Physical Education (2 hours)
General Electives (20-25 hours)
124 Total Hours
Concentration C: Hospitality and Restaurant Management (HRMN): Students
in the hospitality and restaurant management concentration prepare
themselves for managerial positions in the restaurant and hospitality industry. This dynamic curriculum provides students with skills in foods and business, as well as hospitality and restaurant management. Students have the opportunity to manage and operate a restaurant on campus. Students obtain hands-on experience by completing 1,000 hours of satisfactory, verifiable work experience in the hospitality and restaurant industry, usually completed during the summer and on part-time jobs during the school year. This noncredit work experience must be completed prior to graduation. A management internship, which allows students to acquire practical management experience and specialized knowledge from supervised work in a hotel, restaurant, or other hospitality-related business, is also part of this degree. Students in this program can complete a minor in business.
Hospitality and Restaurant Management Degree Requirements:
English/Communications (12-15 hours)
English University Core courses (6 hours)
ENGL 2003 Advanced Comp or Exemption Elective - See page 41 for exemption information COMM 1313 Fundamentals of Communication
Communication Intensive Course - AGED 3142/3141L Agri
Communications with lab
Mathematics University Core Course ( 3 hours) and
WCOB 1120 Computer Competency Requirement or Equivalent
Science University Core Courses and Departmental Requirements
(8-9 hours)
University Core CHEM 1103/1101L University Chemistry I
with lab and
University Core CHEM 1123/1121L University Chemistry II
with lab or
BIOL 1543/1541L Principles of Biology with lab and CHEM 1074/1071L Fundamentals of Chemistry with lab Fine Arts/Humanities University Core Courses (6 hours)
Select in two categories from "State Minimum Arts/Humanities
Core" (sections a, b, c, or d) - See page 40
US History University Core Course (3 hours)
Social Sciences University Core Courses ( 9 hours)
PSYC 2003 General Psychology
HESC 2413 Family Relations
ECON 2143 Basic Economics
HRMN Major Requirements ( 17 hours)
HESC 1501 Orientation to HESC
HESC 1213 Nutrition in Health
HESC 2112/2111L Foods I with lab
HESC 3604 Food Preparation for the Hospitality Industry
HESC 3653 Food Systems Management
HESC 4103 Experimental Foods

Additional Requirements (46-52 hours)
HESC 1601 Work Experience Practicum (1-4 hours)
HESC 1603 Introduction to Hospitality and Restaurant
Management
HESC 2123 Catering Management with lab
HESC 2623 Legal Issues in Hospitality Industry with lab or

## Equivalent

HESC 2633 Introduction to Hotel Operations
HESC 2643 Principles of Tourism
HESC 3613 Resort Management
HESC 3633 Front Office Management
HESC 4613 Food Service Purchasing
HESC 4623 Selection and Layout of Food Service Equipment
HESC 4633 Advanced Hotel Operations
HESC 4643 Convention and Meeting Management
HESC 4653 Global Travel and Tourism Management
HESC 4693 Hospitality Management Internship (3-6 hours)
FDSC 2503 Food Safety/Sanitation
AGEC 2143 Ag Financial Records or Equivalent
AGEC 3303 Food \& AG Marketing or Equivalent
Physical Education (2 hours)
General Electives (5-15 hours) - Recommend foreign language (6
hours), HLSC 3633 First Responder-First Aid
124 Total Hours
Food, Human Nutrition and Hospitality Eight-Semester Degree
Program
Students wishing to follow the degree plan in Food, Human
Nutrition and Hospitality should see page 42 in the Academic
Regulations section for university requirements of the program. The
Food, Human Nutrition and Hospitality major has three concentrations:
Dietetics; General Human Nutrition, and Hospitality and Restaurant
Management. Specific courses for all concentrations are available in
Section 2 of the Catalog of Studies, available at http://catalogofstudies.
uark.edu. A description of HESC courses is listed on page 358.
Dietetics Concentration
Fall Semester 1
4 CHEM 1103/1101L University Chemistry I with lab
3 MATH 1203 College Algebra or MATH 1213 Plane
Trigonometry
1 HESC 1501 Orientation to HESC
1 HESC 1201 Introduction to Dietetics \& Nutrition
3 HESC 1213 Nutrition in Health
3 ENGL 1013 Composition I
1 PEAC or DEAC Elective
16 semester hours
Spring Semester 1
4 CHEM 1123/1121L University Chemistry II with lab
3 ENGL 1023 Composition II
4 BIOL 1543/1541L Principles of Biology with lab
3 Elective - Rec: HESC 2203 Nutrition for Exercise and Sport or
Elective
3 Fine Arts \& Humanities University Core
17 semester hours
Fall Semester 2
3 HESC 2112/211L Foods I
2 ANSC 3032 Animal Physiology I
3 PSYC 2003 General Psychology
3 ENGL 2003 Advanced Composition or Exemption Elective
3 COMM 1313 Fundamentals of Communication
1 PEAC or DEAC

| 15 semester hours |
| :--- |
| Spring Semester 2 |
| 4 CHEM 2613/ 2611L Organic Physiological Chemistry |
| 3 HESC 2413 Family Relations |
| 2 ANSC 3042 Animal Physiology II |
| 3 HESC 3203 Nutrition for the Health Professional \& Educator |
| 3 Fine Arts \& Humanities University Core |
| 15 semester hours |
| Fall Semester 3 |
| 3 CHEM 3813 Organic Chemistry II |
| 4 HESC 3604/3600L Food Preparation for the Hospitality Industry |
| with lab |
| 3 HESC 3213 Dietetic \& Nutrition Practices |
| 3 HESC 3653 Food Systems Management |
| 3 General Elective |
| 16 semester hours |
| Spring Semester 3 |
| 4 BIOL 2013/2011L Microbiology with lab (BIOL 1543/1541L |
| and 2 semesters of general chemistry) |
| 3 Communications Intensive Elective: ENGL 3053 Technical |
| and Report Writing, JOUR 3123 Feature Writing or AGED |
| 3142/3141L Agri Communications |
| 3 AGST 4023 Principles of Experimentation or Equivalent |
| Elective |
| 3 HESC 4103/4100L Experimental Foods with lab |
| 3 US History University Core Elective |
| 16 semester hours |
| Fall Semester 4 |
| 3 HESC 4213 Advanced Nutrition |
| 3 HESC 4613 Food Service Purchasing |
| 4 HESC 4264/4260L Medical Nutrition Therapy I |
| 3 HESC 4223 Nutrition During the Life Cycle |
| 3 Social Science Core Elective |
| 16 semester hours |
| Spring Semester 4 |
| 3 HESC 4273 Medical Nutrition Therapy II |
| 3 HESC 4623 Selection \& Layout of Food Service Equipment |
| 3 HESC 425V Food and Nutrition Seminar |
| 3 GenC 4243 Community Nutrition. |
| 124 Total Hours |

SECTION VIII: Action Recorded by Registrar's Office
PROGRAM INVENTORY/DARS
$\qquad$ SUBJ $\qquad$ CIP $\qquad$ CRTS $\qquad$
DGRE $\qquad$
PGCT $\qquad$
OFFC\&CRTY VALID $\qquad$

REPORTING CODES

PROG. DEF. $\qquad$ REQ. DEF.
Initials $\qquad$ Date $\qquad$

## Distribution

## University Course and Programs Committee <br> 15-Dec-06

## TABLE ONE <br> Bumpers College of Agricultural, Food and Life Sciences

School of Human Environmental Sciences

FHNHBS - Food, Human Nutrition, and Hospitality - Attachment 1A
Proposal adds course HESC 2643 as a requirement and reduces the hours of general electives as specified in Section $\vee$ of the attachment.

## TABLE TWO

Walton College of Business

## Department of Economics

BECOBS - Economics - Attachment 2A
Proposal changes the AP Score requirements for receiving course credit for ECON 2013 and ECON 2023 as specified in Section V of the attachment.

## TABLE THREE

## College of Engineering

## General Engineering

GNEG - General Engineering - Attachment 3A
Proposal creates a common first-year experience for students pursuing a BS degree in several majors as specified in Section V of the attachment.

Department of Biological and Agricultural Engineering

BENGBS - Biological Engineering - Attachment 3B
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Civil Engineering

CVEGBS - Civil Engineering - Attachment 3C
Proposal allows the curriculum to conform to the new first-year experience program as specified in the attachment.

## PAGE TWO

## TABLE THREE (CONTINUED)

## College of Engineering

Department of Computer Science and Computer Engineering

CENGBS - Computer Engineering - Attachment 3D
Proposal requests seven curriculum changes as specified in Section V of the attachment.

CSCEBS - Computer Science - Attachment 3E
Proposal requests seven curriculum changes as specified in Section V of the attachment.

Department of Electrical Engineering

ELEGBS - Electrical Engineering - Attachment 3F
Proposal requests four curriculum changes as specified in Section V of the attachment.

Department of Industrial Engineering

INEGBS - Industrial Engineering - Attachment 3G
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Mechanical Engineering

MEEGBS - Mechanical Engineering - Attachment 3H
Proposal requests eleven curriculum changes as specified in
Section V of the attachment.

## ATTACHMENT 2A

## ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals


Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).
## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$ -
Allow students in program to complete under this program until Term: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made: We are requesting to change the AP requirements for ECON 2013 and 2023 so that students would receive credit automatically if they received a score of 4 or 5 on the AP test.

Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
$\square$ Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
SECTION VI: Justification
Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
The proposed change recognizes the exceptional achievement an AP score of 4 or 5 as credit along with those for other classes at the University of Arkansas

## SECTION VII: Catalog Text and Format

Insert the current catalog text and the proposed catalog text. Be sure that the proposed text includes all the elements listed below in order. Do not include university requirements or college requirements. Do not substitute a sample schedule for an explicit statement of requirements. Use standard terms and vocabulary (see Academic Policy 1621.10).

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.
Current Catalog text (p. 49 of 2006-2007 catalog):
Macroeconomics ECON 2013 3Pq - subsequent paperwork reads 3Pq, 5C but is not reflected in the 2006-2007 catalog
Microeconomics ECON 2023 3Pq - subsequent paperwork reads 3Pq, 5C but is not reflected in the 2006-2007 catalog

## Proposed Catalog text:

Macroeconomics ECON 2013 4C
Microeconomics ECON 2023 4C
SECTION VIII: Action Recorded by Registrar's Office
PROGRAM INVENTORY/DARS
PGRM $\qquad$ SUBJ $\qquad$ CIP $\qquad$ CRTS $\qquad$
DGRE $\qquad$ PGCT $\qquad$ OFFC\&CRTY VALID $\qquad$
REPORTING CODES

PROG. DEF. $\qquad$
REQ. DEF.

Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:
(1) College
(7) Treasurer
(2) Department
(3) Admissions
(8) Undergraduate Program Committee
(5) Continuing Education Initials Date
$\qquad$
$\qquad$

## University Course and Programs Committee <br> 15-Dec-06

## TABLE ONE <br> Bumpers College of Agricultural, Food and Life Sciences

School of Human Environmental Sciences

FHNHBS - Food, Human Nutrition, and Hospitality - Attachment 1A
Proposal adds course HESC 2643 as a requirement and reduces the hours of general electives as specified in Section $\vee$ of the attachment.

## TABLE TWO

Walton College of Business

## Department of Economics

BECOBS - Economics - Attachment 2A
Proposal changes the AP Score requirements for receiving course credit for ECON 2013 and ECON 2023 as specified in Section V of the attachment.

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## College of Engineering

## General Engineering

GNEG - General Engineering - Attachment 3A
Proposal creates a common first-year experience for students pursuing a BS degree in several majors as specified in Section V of the attachment.

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BENGBS - Biological Engineering - Attachment 3B
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Civil Engineering

CVEGBS - Civil Engineering - Attachment 3C
Proposal allows the curriculum to conform to the new first-year experience program as specified in the attachment.

## PAGE TWO

## TABLE THREE (CONTINUED)

## College of Engineering

Department of Computer Science and Computer Engineering

CENGBS - Computer Engineering - Attachment 3D
Proposal requests seven curriculum changes as specified in Section V of the attachment.

CSCEBS - Computer Science - Attachment 3E
Proposal requests seven curriculum changes as specified in Section V of the attachment.

Department of Electrical Engineering

ELEGBS - Electrical Engineering - Attachment 3F
Proposal requests four curriculum changes as specified in Section V of the attachment.

Department of Industrial Engineering

INEGBS - Industrial Engineering - Attachment 3G
Proposal requests five curriculum changes as specified in Section V of the attachment.

Department of Mechanical Engineering

MEEGBS - Mechanical Engineering - Attachment 3H
Proposal requests eleven curriculum changes as specified in
Section V of the attachment.

## ATTACHMENT 3A ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

## SECTION I: Approvals

| Department / Program Chair | Date Submitted |
| :--- | :--- |
| College Dean | Date |
| University Course and Programs Committee | Date |
| Graduate Council Chair | Date |


| Faculty Senate Chair | Date |
| :--- | :---: |
| Provost | Date |
| Board of Trustees Approval/Notification Date |  |
| Arkansas Higher Education Coordinating Board Approval/Notification Date |  |

SECTION II: Profile Data - Required Information and Name Change Information

| Academic Unit: | Major/Field of Study | $\square$ Minor | $\square$ Other Unit |  |
| :---: | :---: | :---: | :---: | :---: |
| Level: $\quad \square$ | $\square$ Undergraduate | $\square$ Graduate | $\square$ Law | Effective Catalog Year Fall 2007 |
| Current Name En | Engineering |  |  |  |
| College, School, Division EN | ENGR | Department Code | - |  |
| Current Code (6 digit Alpha) | a) | Proposed Code (6 <br> Prior approval from the | digit Alpha) <br> e Office of the Re | strar is required. |
| $\square$ Interdisciplinary Program |  | CIP Code $\qquad$ <br> Prior assignment from | Office of Institut | nal Research is required. |

Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).$\square$ Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$

## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$ -
Allow students in program to complete under this program until Term: $\qquad$ Year: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made: The College of Engineering is implementing a common first-year experience for students pursuing the following Bachelor of Science degrees: Biological Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Computer Science. See separate program change forms for each of these programs for specific details.
1622.20A p/vcaa 10/1/00
C:\program files\qualcomm\eudora\attach\UCPC December 2006-Overview of Freshman Engineering Program - Attachment 3A1.doc

Check if either of these boxes apply and provide the necessary signature:
$\boxtimes$ Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here:

Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$
Check all the boxes that apply and complete the required sections of the form:Change of Name and Code (Complete only sections I, II, V and VII.)
$\square$ Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
During the 2005-2006 academic year, the Dean of the College of Engineering (COE) appointed the COE Retention Task Force to investigate ways of improving the retention and graduation rates of new freshmen entering the COE. The COE Retention Task Force was asked to place particular emphasis on the retention of new freshmen to their sophomore year. The COE Retention Task Force studied the reasons why new freshmen (at the University of Arkansas and around the United States) are not retained, as well the characteristics of successful and unsuccessful programs aimed at improving retention rates in other colleges of engineering. Ultimately, the COE Retention Task Force recommended the creation of a sub-committee, the Freshman Engineering Committee, to develop a proposal for the creation of a Freshman Engineering Center designed to provide support services to new freshmen in the COE, and creation of a common first-year academic experience for new freshmen in the COE. The Freshman Engineering Committee was formed and, in the summer of 2006,decided that the appropriate course of action was to pursue a two-semester common experience that includes both an academic experience and a student services center.

## SECTION VII: Catalog Text and Format

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section $V$ will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

## FRESHMAN ENGINEERING PROGRAM

With the exception of students intending to pursue a Bachelor of Science in Chemical Engineering, all new freshmen entering the College of Engineering and all transfer students entering the College of Engineering with less than $\mathbf{2 4}$ credit hours are initially designated as either General Engineering or Pre-Engineering students. These students participate in the Freshman Engineering Program. The objective of the Freshman Engineering Program is to establish the foundation for the academic and professional success of new students entering the College of Engineering by:

- delivering to them appropriate educational content so that they can move on to a discipline-specific College of Engineering undergraduate program,
- facilitating the development of their academic skills so that they understand the workload, professionalism, and ethics required to succeed in a rigorous academic environment, and
- providing them with academic, career, and personal advising in a proactive manner.

The Freshman Engineering Program is comprised of two sub-programs: the Freshman Engineering Academic Program and the Freshman Engineering Student Services Program. These programs work together to meet the objective of the Freshman Engineering Program.

To become a General Engineering student, a new student must: (i) be placed into MATH 1285: Precalculus Mathematics or higher, and (ii) not be placed into ENGL 0003: Basic Writing. New students who do not meet these requirements are designated as Pre-Engineering students, and they may only become General Engineering students when they: (i) have a University of Arkansas GPA of 2.0 or higher, and (ii) have rectified the deficiencies that prevented their becoming General Engineering students upon entry into the program.

Freshman Engineering Academic Program
The Freshman Engineering Academic Program is a two-semester program for General Engineering students. The coursework content of this program is as follows:

| Fall Semester |  |  |
| :---: | :---: | :---: |
| GNEG 1111 | Introduction to Engineering I | 1 |
| ENGL 1013 | Composition I | 3 |
| MATH 2554 | Calculus I | 4 |
| CHEM 1103 | University Chemistry I | 3 |
| PHYS 2054 | University Physics I | 4 |
|  |  | 15 total credit hours |
| Spring Semester |  |  |
| GNEG 1121 | Introduction to Engineering II | 1 |
| ENGL 1023T | Technical Composition II | 3 |
| MATH 2564 | Calculus II | 4 |
|  | Freshman Engineering Science Elective | 4 |
|  | Humanities/Social Science Elective | 3 |
|  |  | 15 total credit hours |

The Freshman Engineering Science Elective requires students to select either CHEM 1123/1121L: University Chemistry II or PHYS 2074: University Physics II. In choosing a course, students are made aware of the preferences of each College of Engineering undergraduate program. However, all College of Engineering undergraduate programs accept both of these courses.

For new students who are placed into MATH 1285, the MATH 2554 and PHYS 2054 requirements shift to the spring semester, the Humanities/Social Science Elective requirement shifts to the fall semester, and PHYS 2074 is removed as an option for the Freshman Science Elective. These students are encouraged to complete MATH 2564 during the summer prior to their sophomore year.

Students who enter the Freshman Engineering Program with credit for or exemptions from one or more of the required courses in the Freshman Engineering Academic Program (or other courses required by College of Engineering undergraduate programs) are advised on a case-by-case basis and given the opportunity to choose advanced, replacement courses that are appropriate for any College of Engineering undergraduate program or for a program that they are seriously considering. However, ENGL 1013: Composition I and ENGL 1023T: Technical Composition II are closely coordinated with the Introduction to Engineering course sequence. Therefore, General Engineering students are encouraged to complete the Composition sequence regardless of their academic background.

Declaring a College of Engineering Major
A short time before pre-registration for the fall semester of the sophomore year (typically in mid-March), General Engineering students choose a major within a specific College of Engineering discipline. To move into this College of Engineering undergraduate program, a General Engineering student must have completed each required course in the Freshman Engineering Academic Program with a University of Arkansas GPA of 2.0 and satisfied any additional requirements set forth by their new home department. General Engineering students who do not meet these conditions are advised academically within the Freshman Engineering Program on a case-by-case basis until they meet the conditions for entering a discipline-specific College of Engineering undergraduate program. These students are required to enroll in the courses necessary to remove their deficiencies; however, they can also enroll in discipline-specific College of Engineering courses for which they have satisfied the pre-requisites.

Freshman Engineering Student Services Program
The Freshman Engineering Student Services Program provides proactive support to General Engineering and PreEngineering students through two sets of activities. First, the Freshman Engineering Student Services Program organizes and executes, for General Engineering and Pre-Engineering students:

- summer orientation,
- a peer mentoring program, and
- a tutoring program.

Second, the Freshman Engineering Students Services Program provides, for General Engineering and Pre-Engineering students:

- academic advising,
- basic career advising,
- personal counseling, and
- academic success strategy training.

The Freshman Engineering Student Services Program is executed by a team of professionals who constitute the Freshman Engineering Student Services Staff. The Freshman Engineering Center, located on the third floor of the southeast wing of Engineering Hall, houses the Freshman Engineering Student Services Program and includes common study areas and computer labs for General Engineering and Pre-Engineering students, space for the peer mentoring and tutoring programs, and offices for the Freshman Engineering Student Services Staff.

## SECTION VIII: Action Recorded by Registrar's Office

PROGRAM INVENTORY/DARS
PGRM $\qquad$ SUBJ $\qquad$
DGRE $\qquad$ PGCT $\qquad$
$\qquad$ CRTS $\qquad$
OFFC\&CRTY VALID $\qquad$
REPORTING CODES
PROG. DEF. $\qquad$ REQ. DEF.
Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:
(2) Department
(3) Admissions
(8) Undergraduate Program Committee
(5) Continuing Education Initials Date Date
(6) Graduate School

## ATTACHMENT 3B ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

## SECTION I: Approvals

| Department / Program Chair | Date Submitted |
| :--- | :--- |
| College Dean | Date |
| University Course and Programs Committee | Date |
| Graduate Council Chair | Date |


| Faculty Senate Chair | Date |
| :--- | :---: |
| Provost | Date |
| Board of Trustees Approval/Notification Date |  |
| Arkansas Higher Education Coordinating Board Approval/Notification Date |  |

SECTION II: Profile Data - Required Information and Name Change Information


Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).$\square$ Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$

## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$ -
Allow students in program to complete under this program until Term: $\qquad$ Year: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made:

## There are 5 proposed changes to the requirments for the B.S. degree in Biological Engineering:

1622.20 A p/vcaa $\quad$ C:\program files\qualcomm\eudora\attach $10 / 1 / 00$ UPC December 2006 -BENGBS -

Attachment 3B.doc
(2) Add the requirement of CHEM 3603/3601L and CHEM 3613/3611L and eliminate the requirement of CHEM 2613/2611L.
(3) Eliminate the requirement of BIOL 1543/1541L and recognize it as a needed deficiency course but not for degree credit.
(4) Add 1 hour to BENG 4103 increasing it to a 4-hour required course, and eliminate the requirement for ELEG 2103/2101L. (5) Increase Technical Elective requirement by 3 hours to 12 hours, with at least 6 hours in engineering courses.

These changes will decrease total hours for the degree from 129 hours to 128 hours.

Check if either of these boxes apply and provide the necessary signature:
Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$
Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here:

Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
ØChange Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

【Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
(1) above is needed to adopt the new common freshman engineering program.
(2) above is needed to strengthen the basic science background, as suggested by our Advisory Board.
(3) above is needed to recognize college preparation of many entering freshman and to encourage advanced study of biological sciences.
(4) above is needed to effect efficiency in the program in covering biological instrumentation and circuits.
(5) above is needed to maintain sufficient engineering content as needed for accreditation while providing more flexibility for students.

## SECTION VII: Catalog Text and Format

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section $V$ will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.

For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.
Current Catalog (2006-2007) Text
BIOLOGICAL AND AGRICULTURAL ENGINEERING (BAEG)
Lalit Verma
Head of the Department
203 Engineering Hall
479-575-2351

- Professors Gardisser, Griffis, Li, Loewer, VanDevender, Verma
- Associate Professors Carrier, Chaubey, Costello, Huitink, Matlock, Tacker
- Assistant Professors Bajwa, Kavdia, Kim, Osborn, Ye
- Adjunct Professor Ang, Clausen, Deaton, Ingels
- Adjunct Associate Professors Beitle, Yang
- Adjunct Assistant Professors Haggard, Howell, Shafirstein, Wimberly

Biological Engineers improve people's lives today and help assure a sustainable quality of life for tomorrow. They create solutions to problems by coupling living systems (human, plant, animal, environmental, food, and microbial) with the tools of engineering and biotechnology. Biological engineers improve human health through biomedical engineering; ensure a safe, nutritious food supply and create critical, new medicines through biotechnology engineering; secure a healthy and safe environment through ecological engineering. A bachelor of science degree in biological engineering is also excellent preparation for medical school.

Biological Engineering is an ABET accredited program leading to the B.S. degree. M.S. and Ph.D. degrees are also offered. The curriculum is under the joint supervision of the dean of the College of Engineering and the dean of the Dale Bumpers College of Agricultural, Food and Life Sciences. The Bachelor of Science in Biological Engineering degree is conferred by the College of Engineering and is granted after the successful completion of 129 hours of approved course work.

The educational objectives of the Biological Engineering program are to produce graduates who 1) effectively apply engineering to biological systems and processes (plant, animal, human, microbial, and ecosystem) with demonstrated proficiency in basic professional and personal skills, and 2) are well prepared for future challenges in biological engineering, life-long learning, and professional and ethical contributions to society through sustained accomplishments.

## Areas of Concentration

The three areas of concentration in biological engineering are as follows:
Biomedical Engineering - nanomedicine, tissue engineering, organ regeneration and its clinical application, bioinstrumentation, biosensing/medical imaging, medical electronics, physiological modeling, biomechanics, and rehabilitation engineering. This area is excellent preparation for medical, veterinary or dental school as well as for graduate programs in biomedical engineering.

Biotechnology Engineering - biotechnology at the micro- and nano-scale, food processing, food safety and security, developing new products from biomaterials, and biotransformation to synthesize industrial and pharmaceutical products.

Ecological Engineering- integrates ecological principles into the design of sustainable systems to treat, remediate, and prevent pol $ᄀ$ lution to the environment. Applications include stream restoration, watershed management, water and wastewater treatment design, ecological services management, urban greenway design and enclosed ecosystem design.

Each student is required to complete 15 semester hours of approved electives in his or her area of concentration. Six hours must be from the biological engineering design elective courses (listed below) from a single area of concentration. The remaining nine hours are classified as technical electives and consist mainly of upper-division courses in engineering, mathematics, and the sciences as approved by the student's adviser. The selected technical electives must included at least
three hours of upper-level engineering courses, either within BENG or from other engineering departments. The department maintains a list of approved electives.

The areas of technical concentration and the recommended elective courses for each are listed here.

## Biomedical Engineering

Design Electives:
BENG 3213 Biomedical Engineering: Emerging Methods and Applications
BENG 4203 Biomedical Engineering Principles
Technical Electives:
BIOL 2533/2531L Cell Biology
CHEM 3613 Organic Chemistry II
CHEM 3611L Organic Chemistry II Lab
BIOL 2404 Comparative Vertebrate Morphology, or BIOL 2443/2441L Human Anatomy
BIOL 4234 Comparative Physiology, or BIOL 2213/2211L Human Physiology
BENG 4113 Risk Analysis for Biological Systems
BENG 4123 Biosensors and Bioinstrumentation
BENG 4623 Biological Reactor Systems Design
BENG 451VH, Honors Thesis
BIOL 4233 Microbial Genetics
KINS 3353 Mechanics of Human Movement
ELEG 2903 Digital Systems
HESC 3204 Nutrition
Biotechnology Engineering
Design Electives:
BENG 4703 Biotechnology Engineering
BENG 4623 Biological Reactor Systems Design
Technical Electives:
BENG 4113 Risk Analysis for Biological Systems
BENG 4123 Biosensors and Bioinstrumentation
BENG 451VH Honors Thesis
FDSC 4304 Food Chemistry
FDSC 4124 Food Microbiology
FDSC 3103 Principles of Food Proc.
BIOL 4233 Microbial Genetics
BIOL 4313 Physiology of Microorganisms
CHEM 3453/3451L Elements of Physical Chemistry
MEEG 4413 Heat Transfer
CHEG 3153 Non-equilibrium Mass Transfer
CHEG 4423 Auto. Process Control
HESC 3204 Nutrition
Ecological Engineering
Design Electives:
BENG 4903 Ecological Engineering Principles
BENG 4923 Ecological Engineering Design
Technical Electives:
BENG 4113 Risk Analysis for Biological Systems
BENG 4403 Enclosed Ecosystems Design
BENG 4623 Biological Reactor Systems Design
BENG 4803 Precision Agriculture
BENG 4123 Digital Remote Sensing and GIS
BENG 451VH, Honors Thesis
BIOL 3863/3861L General Ecology
CVEG 3243 Environmental Engineering
CVEG 4243 Environmental Engineering Design

CSES 2203 Soil Science
CSES 4043 Environmental Impact and Fate of Pesticides
GEOG 4543 Geographic Information Systems
ENSC 4034 Analysis of Environmental Contaminants
Biological Engineering Eight-Semester Degree Program
The following section contains the list of courses required for the Bachelor of Science in Biological Engineering degree and a sug $\neg$ gested sequence. Some courses are not offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Pre-Medical students must take CHEM 3603/3601L, Organic Chemistry I, and CHEM 3613/3611L, Organic Chemistry II, instead of CHEM 2613/2611L, Organic Physiological Chemistry. This requires special scheduling of courses beginning in the first sophomore semester. See your faculty adviser for this schedule plan.

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take ENGL 2023 during the third year or gain exemption.
Fall 1
3 GNEG 1103 Introduction to Engineering
3 ENGL 1013 Composition I
3 CHEM 1103 University Chemistry I
4 MATH 2554 Calculus I
3 U.S. History Requirement
16 semester hours
Spring 1
2 BENG 1022 Biological Engr Design Studio I
3 ENGL 1023 Technical Composition II
3 CHEM 1123 University Chemistry II
1 CHEM 1121L University Chemistry II Lab
4 MATH 2564 Calculus II
3 BIOL 1543 Principles of Biology
1 BIOL 1541L Principles of Biology Lab
17 semester hours
Fall 2
2 BENG 2612 Biological Engr Design Studio II
3 MEEG 2003, Statics
4 PHYS 2054 University Physics I
4 MATH 2574 Calculus III
3 BIOL 2013 General Microbiology*
1 BIOL 2011L General Microbiology Lab
17 semester hours
Spring 2
2 BENG 2622 Biological Engr Design Studio III
4 PHYS 2074 University Physics II
3 MEEG 2403 Thermodynamics, or CHEG 2313 Thermodynamics of Single Component Systems
3 ELEG 2103 Electronic Circuits
1 ELEG 2101L Electronic Circuits Lab
3 CHEM 2613 Organic Physiological Chemistry*
1 CHEM 2611L Organic Physiological Chemistry Lab
17 semester hours
Fall 3
2 BENG 3712 Engr Properties of Biol Materials
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3 MEEG 3013 Mechanics of Materials
3 CVEG 3213 Hydraulics, or MEEG 3503 Mechanics of Fluids, or CHEG 2133 Fluid Mechanics
3 CHEM 3813 Intro. to Biochemistry
4 MATH 3404 Differential Equations
3 Technical Elective
18 semester hours
Spring 3
3 BENG 3723 Unit Operations in Biological Engr
3 BENG 3803 Mechanical Design in Biological Engr
3 BENG 4103 Instrumentation in Biological Engr
3 BENG Design elective
3 Humanities/Social Science Elective
0 ENGL 2003 Advanced Composition or Exemption
15 semester hours
Fall 4
3 BENG 4813 Senior Biological Engr Design I
3 BENG 3733 Transport Phenomena in Biological Systems
3 BENG Design Elective
6 Humanities/Social Studies Elective
15 semester hours
Spring 4
2 BENG 4822 Senior Biological Engr Design II
6 \text { Humanities/Social Science Elective}
3 Technical (Engineering) elective
3 Technical elective
14 semester hours
129 Total hours
```

SEE PAGE 321 FOR BIOLOGICAL ENGINEERING (BENG) COURSES
$* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *$
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Revised Catalog Text (proposed 2007-2008)

## BIOLOGICAL AND AGRICULTURAL ENGINEERING (BAEG)

## Lalit Verma

Head of the Department
203 Engineering Hall
479-575-2351

- Professors Gardisser, Griffis, Li, Loewer, VanDevender, Verma
- Associate Professors Carrier, Chaubey, Costello, Huitink, Kim, Matlock, Tacker
- Assistant Professors Bajwa, Kavdia, Osborn, Ye
- Adjunct Professor Ang, Clausen, Deaton, Ingels
- Adjunct Associate Professors Beitle, Yang
- Adjunct Assistant Professors Haggard, Howell, Shafirstein, Wimberly

Biological Engineers improve people's lives today and help assure a sustainable quality of life for tomorrow. They create solutions to problems by coupling living systems (human, plant, animal, environmental, food, and microbial) with the tools of engineering and biotechnology. Biological engineers improve human health through biomedical engineering; ensure a safe, nutritious food supply and create critical, new medicines through biotechnology engineering; secure a healthy and safe environment through ecological engineering. A bachelor of science degree in biological engineering is also excellent preparation for medical school.

Biological Engineering is an ABET accredited program leading to the B.S. degree. M.S. and Ph.D. degrees are also offered. The curriculum is under the joint supervision of the dean of the College of Engineering and the dean of the Dale Bumpers College of Agricultural, Food and Life Sciences. The Bachelor of Science in Biological Engineering degree is conferred by the College of Engineering and is granted after the successful completion of 128 hours of approved course work.

The educational objectives of the Biological Engineering program are to produce graduates who 1) effectively apply engineering to biological systems and processes (plant, animal, human, microbial, and ecosystem) with demonstrated proficiency in basic professional and personal skills, and 2) are well prepared for future challenges in biological engineering, life-long learning, and professional and ethical contributions to society through sustained accomplishments.

## Areas of Concentration

The three areas of concentration in biological engineering are as follows:
Biomedical Engineering - nanomedicine, tissue engineering, organ regeneration and its clinical application, bioinstrumentation, biosensing/medical imaging, medical electronics, physiological modeling, biomechanics, and rehabilitation engineering. This area is excellent preparation for medical, veterinary or dental school as well as for graduate programs in biomedical engineering.

Biotechnology Engineering - biotechnology at the micro- and nano-scale, food processing, food safety and security, developing new products from biomaterials, and biotransformation to synthesize industrial and pharmaceutical products.

Ecological Engineering- integrates ecological principles into the design of sustainable systems to treat, remediate, and prevent pol $\neg$ lution to the environment. Applications include stream restoration, watershed management, water and wastewater treatment design, ecological services management, urban greenway design and enclosed ecosystem design.

Each student is required to complete 18 semester hours of approved electives in his or her area of concentration. Six hours must be from the biological engineering design elective courses (listed below) from a single area of concentration. The remaining twelve hours are classified as technical electives and consist mainly of upper-division courses in engineering, mathematics, and the sciences as approved by the student's adviser. The selected technical electives must included at least six hours of upper-level engineering courses, either within BENG or from other engineering departments. The department maintains a list of approved electives.

The areas of technical concentration and the recommended elective courses for each are listed here.
Biomedical Engineering
Design Electives:
BENG 3213 Biomedical Engineering: Emerging Methods and Applications
BENG 4203 Biomedical Engineering Principles
Technical Electives:
BIOL 2533/2531L Cell Biology
BIOL 2404 Comparative Vertebrate Morphology, or BIOL 2443/2441L Human Anatomy
BIOL 4234 Comparative Physiology, or BIOL 2213/2211L Human Physiology
BENG 4113 Risk Analysis for Biological Systems
BENG 4123 Biosensors and Bioinstrumentation
BENG 4623 Biological Reactor Systems Design
BENG 451VH, Honors Thesis
BIOL 4233 Microbial Genetics
KINS 3353 Mechanics of Human Movement
ELEG 2903 Digital Systems
HESC 3204 Nutrition
Biotechnology Engineering
Design Electives:
BENG 4703 Biotechnology Engineering
BENG 4623 Biological Reactor Systems Design

Technical Electives:
BENG 4113 Risk Analysis for Biological Systems
BENG 4123 Biosensors and Bioinstrumentation
BENG 451VH Honors Thesis
FDSC 4304 Food Chemistry
FDSC 4124 Food Microbiology
FDSC 3103 Principles of Food Proc.
BIOL 4233 Microbial Genetics
BIOL 4313 Physiology of Microorganisms
CHEM 3453/3451L Elements of Physical Chemistry
MEEG 4413 Heat Transfer
CHEG 3153 Non-equilibrium Mass Transfer
CHEG 4423 Auto. Process Control
HESC 3204 Nutrition
Ecological Engineering
Design Electives:
BENG 4903 Ecological Engineering Principles
BENG 4923 Ecological Engineering Design
Technical Electives:
BIOL 3863/3861L General Ecology
CVEG 3223 Hydology
BENG 4113 Risk Analysis for Biological Systems
BENG 4403 Enclosed Ecosystems Design
BENG 4623 Biological Reactor Systems Design
BENG 4803 Precision Agriculture
BENG 4123 Digital Remote Sensing and GIS
BENG 451VH, Honors Thesis
CVEG 3243 Environmental Engineering
CVEG 4243 Environmental Engineering Design
CSES 2203 Soil Science
CSES 4043 Environmental Impact and Fate of Pesticides
GEOG 4543 Geographic Information Systems
ENSC 4034 Analysis of Environmental Contaminants
Biological Engineering Eight-Semester Degree Program
The following section contains the list of courses required for the Bachelor of Science in Biological Engineering degree and a suggested sequence. Some courses are not offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.

Students should note that BIOL 1543/1541L is a pre- or co-requisite to BENG 2612 in the Fall 2 semester and BIOL $\underline{2013 / 2011 L}$ in the Spring 2 semester. Students should earn advanced college credit for BIOL 1543/1541L, obtain placement permission from the Biological Sciences Department or take the course for non-degree credit.

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take ENGL 2003 during the third year or gain exemption.
Fall 1
1 GNEG 1111 Introduction to Engineering I
3 ENGL 1013 Composition I
3 CHEM 1103 University Chemistry I
4 MATH 2554 Calculus I
4 PHYS 2054 University Physics I
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```
15 semester hours
Spring 1
1 GNEG }1121\mathrm{ Introduction to Engineering II
3 ENGL 1023 Technical Composition II
4 Freshman Engineering Science Elective<footnote 1>
4 MATH 2564 Calculus II
3 Humanities/ Social Science Elective
15 semester hours
Fall }
2 BENG 2612 Biological Engr Design Studio II
4 Sophomore Science Elective <footnote 2>
4 MATH 2574 Calculus III
3 CHEM 3603 Organic Chemistry I
1 CHEM 3601L Organic Chemistry I Lab
2 GNEG 1122 Introduction to CAD
16 semester hours
Spring 2
2 BENG 2622 Biological Engr Design Studio III
4 MATH 3404 Differential Equations
3 CHEM 3613 Organic Chemistry II
1 CHEM 3611L Organic Chemistry II Lab
3 MEEG 2003 Statics
3 BIOL 2013 General Microbiology
1 BIOL 2011L General Microbiology Lab
17 semester hours
```


## Fall 3

```
2 BENG 3712 Engr Properties of Biol Materials
3 CHEM 3813 Introduction to Biochemistry
3 MEEG 2403 Thermodynamics, or CHEG 2313 Thermodynamics of Single Component Systems
3 MEEG 3013 Mechanics of Materials
3 CVEG 3213 Hydraulics, or MEEG 3503 Mechanics of Fluids, or CHEG 2133 Fluid Mechanics
3 Technical Elective
17 semester hours
Spring 3
3 BENG 3723 Unit Operations in Biological Engr
3 BENG 3803 Mechanical Design in Biological Engr
4 BENG 4104 Instrumentation in Biological Engr
3 BENG Design Elective
3 U.S. History Requirement
0 ENGL 2003 Advanced Composition or Exemption
16 semester hours
Fall 4
3 BENG 4813 Senior Biological Engr Design I
3 BENG 3733 Transport Phenomena in Biological Systems
3 BENG Design Elective
3 Technical Elective
6 Humanities/Social Science Elective
18 semester hours
Spring 4
2 BENG 4822 Senior Biological Engr Design II
6 Humanities/Social Science Elective
6 Technical Elective
14 semester hours
<footnote 1> The Freshman Engineering Science Elective must be chosen from either: CHEM 1123/1121L or PHYS 2074. <footnote 2> The Sophomore Science Elective must be PHYS 2074 (if CHEM 1123/1121L was chosen as the Freshman Engineering Science Elective) or CHEM 1123/1121L (if PHYS 2074 was chosen as the Freshman Engineering Science Elective). That is, both courses are required for the degree.

SEE PAGE 321 FOR BIOLOGICAL ENGINEERING (BENG) COURSES

\section*{SECTION VIII: Action Recorded by Registrar's Office}

PROGRAM INVENTORY/DARS
PGRM \(\qquad\) SUBJ \(\qquad\) CIP \(\qquad\)
CRTS \(\qquad\)

DGRE \(\qquad\) PGCT \(\qquad\) OFFC\&CRTY VALID \(\qquad\)
REPORTING CODES
PROG. DEF. \(\qquad\) REQ. DEF.
Initials \(\qquad\) Date \(\qquad\)

\section*{Distribution}

Notification to:
(1) College
(7) Treasurer
(2) Department
(8) Undergraduate Program Committee
(4) Institutional Research
(5) Continuing Education (6) Graduate School Initials _ Date Date
\(\qquad\)

\section*{ATTACHMENT 3C \\ ADD, CHANGE OR DELETE PROGRAM OR UNIT}

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals
\begin{tabular}{ll}
\hline Department / Program Chair & Date Submitted \\
\hline College Dean & Date \\
\hline University Course and Programs Committee & Date \\
\hline Graduate Council Chair & Date
\end{tabular}
\begin{tabular}{lc}
\hline Faculty Senate Chair & Date \\
\hline Provost & Date \\
\hline Board of Trustees Approval/Notification Date & \\
\hline Arkansas Higher Education Coordinating Board Approval/Notification Date
\end{tabular}

SECTION II: Profile Data - Required Information and Name Change Information


Proposed Name \(\qquad\)
When a program name is changed, enrollment of current students reflects the new name.

\section*{SECTION III: Add a New Program/Unit}For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE <http://www.adhe.arknet.edu.aadept.html>.
\(\square\) Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)

\section*{SECTION IV: Eliminate an Existing Program/Unit}

Code/Name \(\qquad\) Effective Catalog Year \(\qquad\)
No new students admitted to program after Term: \(\qquad\) Year: \(\qquad\) -
Allow students in program to complete under this program until Term: \(\qquad\) Year: \(\qquad\)

\section*{SECTION V: Proposed Changes to an Existing Program}

Insert here a statement of the exact changes to be made:

\section*{a. Drop the current requirement for CVEG 1012, Civil Engineering Fundamentals}

\section*{b. Drop the current requirement for CVEG 1113, Civil Engineering Computer Applications}
\[
\text { 1622.20A p/vcaa } \quad 10 / 1 / 00
\]

\section*{c. Drop the current requirement for CHEM 1101L, University Chemistry I Lab}

\section*{d. Add new requirement -- GNEG 1111, Introduction to Engineering 1 (new course)}

\section*{e. Add new requirement -- GNEG 1121, Introduction to Engineering 2 (new course)}
f. These changes will decrease the total hours required for completing the degree from 136 hours to 132 hours.

Check if either of these boxes apply and provide the necessary signature:
Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here:

Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)
Check all the boxes that apply and complete the required sections of the form:
\(\square\) Change of Name and Code (Complete only sections I, II, V and VII.)
ØChange Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
\(\square\) Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

【Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

\section*{SECTION VI: Justification}

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)

The proposed changes provide compliance with the College of Engineering's proposed Freshman Engineering Program.
The proposed changes do not affect any other degree program.

\section*{SECTION VII: Catalog Text and Format}

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section \(V\) will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:
- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

\section*{Current/Proposed Catalog Text}

Any of the present text that will be changed should be inserted first, then show the proposed text.

\section*{CIVIL ENGINEERING (CVEG)}

Kevin D. Hall
Head of the Department
4190 Bell Engineering Center
479-575-4954
- University Professor Emeritus LeFevre
- University Professor Elliott
- Professors Buffington, Dennis, Gattis, Hall, Selvam, Wang, Young
- Associate Professors Edwards, Soerens
- Associate Professor Emeriti Pleimann
- Assistant Professors Cox, Grimmelsman, Hale, Heymsfield, Williams (R.), Williams (S.)

Civil engineering is the oldest of all the engineering fields, yet it is as contemporary as the need to provide solutions to today's environmental problems and to develop advanced transportation systems. The civil engineer plans, designs, builds, and operates projects for the advancement and well being of society while coordinating and conserving human and natural resources. Civil engineering projects range from small to monumental and include public water systems, buildings, bridges, rail and highway networks, wastewater treatment plants, solid and hazardous waste disposal facilities, airports, and soil conservation and flood diversion controls.

The civil engineering profession offers a vast array of opportunities. Civil engineers may work in private employment or with public agencies. They may work indoors in activities such as planning and design, or outdoors in areas such as construction supervision. Employment is possible anywhere in the world.

The objectives of the civil engineering program are to produce graduates who are:
1. employable in any of the following fields: foundation, earthwork, and embankment design and analysis; water, wastewater, and waste handling and treatment; highway facility design and operation; and structural design and analysis.
2. academically prepared to pursue licensure as a Professional Engineer.
3. prepared to pursue an advanced education.

To fulfill these objectives, all students must take courses in geotechnical, environmental, transportation, and structural engineering. Courses are designed to present "real world" applications without sacrificing conceptual and theoretical basics. Students complete design problems in each of these areas; and, as part of the senior year, they participate in two major design projects.

\section*{Civil Engineering Eight-Semester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Civil Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

\section*{Students who have earned 45 hours must take the Rising Junior Exam.}

Students must also take ENGL 2003 during the third year or gain exemption.

\section*{Fall Semester 1}

3 ENGL 1013 Composition I
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry I
3 PHYS 2054 University Physics I
1 PHYS 2050L University Physics I Lab
1 GNEG 1111 Introduction to Engineering 1
15 semester hours

\section*{Spring Semester 1}
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3 ENGL 1023 Technical Composition II
4 Freshman Science Elective
0 Freshman Science Elective Lab
4 MATH 2564 Calculus II
3 Humanities/social science elective
1 GNEG 1121 Introduction to Engineering 2

\section*{15 semester hours}

Fall Semester 2
4 MATH 2574 Calculus III
3 MEEG 2003 Statics
3 Humanities/social science elective
3 CVEG 2053 Surveying Systems
1 CVEG 2051L Surveying Systems Lab
2 GNEG 1122 Introduction CAD
16 semester hours

\section*{Spring Semester 2}

3 CVEG 2113 Structural Materials
3 INEG 3313 Engineering Statistics
4 MATH 3404 Differential Equations
3 MEEG 3013 Mechanics of Materials
2 GEOL 3002 Geology for Engineers
3 Humanities/Social Science Elective
18 semester hours
Fall Semester 3
4 CVEG 3304 Structural Analysis
3 CVEG 3133 Soil Mechanics
3 CVEG 3213 Hydraulics
3 CVEG 3413 Transportation Engineering
4 Science Elective
17 semester hours
Spring Semester 3
2 CVEG 3022 Public Works Economics
3 CVEG 3223 Hydrology
3 CVEG 3243 Environmental Engineering
3 CVEG 4313 Structural Steel Design I
3 Humanities/social science elective
3 Engineering Elective
0 ENGL 2003 Advanced Composition or Exemption
17 semester hours

\section*{Fall Semester 4}

3 CVEG 4143 Foundation Engineering
3 CVEG 4303 Reinforced Concrete Design I
3 CVEG 4433 Transportation Pavements \& Materials
2 CVEG 4852 Professional Practice Issues
3 Engineering elective
3 Humanities/social science elective
1 Civil Engineering design elective
18 semester hours

\section*{Spring Semester 4}

3 CVEG 4243 Environmental Engr Design
3 CVEG 4513 Construction Mgmt
6 Engineering electives
1 Civil Engineering design elective
3 Humanities/social science elective
16 semester hours

\section*{132 Total hours}

\section*{Elective Courses}

Students must select four 3-hour engineering elective courses in conference with their adviser. The selection must include at least three civil engineering courses. The fourth course can be a civil engineering course or one of the following: MEEG 2013 Dynamics, MEEG 2403 Thermodynamics, ELEG 3903 Electric Circuits and Machines, MEEG 3703 Numerical Methods. Normally, the civil engineering courses are selected from among the 4000-level elective CVEG courses. Exceptional students may be allowed to choose from the 5000 (graduate-level) course series. Humanities and social science electives are selected from courses approved by the college. Lists of approved electives are on file in the department office. All civil engineering students must complete CHEM 1103 University Chemistry I and CHEM 1123/1121L University Chemistry II. Students may choose to complete CHEM 1123/1121L University Chemistry II as the Freshman Science Elective (as part of the Freshman Engineering Program); in such cases, the Civil Engineering Science Elective requirement is satisfied by completing one of the following course sequences: CHEM 3603 and CHEM 3601L, Organic Chemistry, GEOL 3513 and GEOL 3511L, Structural Geology, BIOL 2013 and BIOL 2011L, General Microbiology, or PHYS 2074 and PHYS 2070L, University Physics II. As an alternative, students may choose to complete PHYS 2074/2070L University Physics II as the Freshman Science Elective (as part of the Freshman Engineering Program); in such cases, the Civil Engineering Science Elective requirement is satisfied by completing CHEM 1123/1121L University Chemistry II. Students are advised that a grade of "C" or better in both CHEM 1123 (University Chemistry II) and CHEM 1121L (University Chemistry II Lab) is required to receive credit for CHEM 1101L (University Chemistry I Lab).

\section*{Civil Engineering Design Electives}

Students must complete two of the following four CVEG design project electives: CVEG 4811 Environmental Design Project, CVEG 4821 Geotechnical Design Project, CVEG 4831 Structural Design Project, and CVEG 4841 Transportation Design Project. Each design project elective is associated with a specific a specific design oriented course. The associated course must be taken at the same time as the design project elective. The associated courses may be taken alone but the design electives cannot.

\section*{Honors Program Requirements}

Students enrolled in the Honors College who are to receive the Bachelor of Science in Civil Engineering must complete a minimum of 12 hours of honors credit. At least 6 hours must be completed within the Civil Engineering program including at least 3 hours resulting in an Honors Thesis. The CVEG honors courses are acceptable as engineering electives and in some cases may be substituted for required courses. The following Civil Engineering courses are offered for honors credit: CVEG 491V H Honors Studies in Geotechnical Engineering, CVEG 492V H Honors Studies in Environmental Engineering, CVEG 493V H Honors Studies in Structural Engineering, CVEG 494V H Honors Studies in Transportation Engineering, and CVEG 4983 H Undergraduate Honors Thesis

\section*{SECTION VIII: Action Recorded by Registrar's Office}

PROGRAM INVENTORY/DARS
\begin{tabular}{ll} 
PGRM \(\quad\) SUBJ \\
DGRE ___ &
\end{tabular}

\section*{REPORTING CODES}

PROG. DEF. \(\qquad\) REQ. DEF. Initials __ Date \(\qquad\)
Distribution

Notification to:
(1) College
(1) College
(7) Treasurer
(2) Department
(3) Admissions
(8) Undergraduate Program Committee

CIP \(\qquad\)
OFFC\&CRTY VALID \(\qquad\) CRTS \(\qquad\) -
(4) Institutional Research
(5) Continuing Education
(6) Graduate School
(6) Graduate School
\(\qquad\) Date \(\qquad\)

\section*{ATTACHMENT 3D ADD, CHANGE OR DELETE PROGRAM OR UNIT}

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

\section*{SECTION I: Approvals}
\begin{tabular}{ll}
\hline Department / Program Chair & Date Submitted \\
\hline College Dean & Date \\
\hline University Course and Programs Committee & Date \\
\hline Graduate Council Chair & Date
\end{tabular}
\begin{tabular}{lc}
\hline Faculty Senate Chair & Date \\
\hline Provost & Date \\
\hline Board of Trustees Approval/Notification Date & \\
\hline Arkansas Higher Education Coordinating Board Approval/Notification Date
\end{tabular}

SECTION II: Profile Data - Required Information and Name Change Information


Proposed Name \(\qquad\)
When a program name is changed, enrollment of current students reflects the new name.

\section*{SECTION III: Add a New Program/Unit}For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE <http://www.adhe.arknet.edu.aadept.html>.
\(\square\) Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)

\section*{SECTION IV: Eliminate an Existing Program/Unit}

Code/Name \(\qquad\) Effective Catalog Year \(\qquad\)
No new students admitted to program after Term: \(\qquad\) Year: \(\qquad\) -
Allow students in program to complete under this program until Term: \(\qquad\) Year: \(\qquad\)

\section*{SECTION V: Proposed Changes to an Existing Program}

Insert here a statement of the exact changes to be made: The following changes are being implemented to accommodate the introduction of the freshman year changes implemented by the College of Engineering:
1. The course numbers for CSCE 1113/1111L Programming Foundations I and lab change to CSCE 2003/2001L keeping the same course name.
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Attachment 3D1.doc

\section*{2. The course numbers for CSCE 1123/1121L Programming Foundations II and lab change to CSCE 2013/2011L keeping the same course name.}
3. The course number for CSCE 2143 Data Structures is changing to CSCE 3143 keeping the same course name.
4. The course number for CSCE 3513 Software Engineering is changing to CSCE 4513 keeping the same course name.
5. GNEG 1111, Introduction to Engineering I and 1121, Introduction to Engineering II are being added to the program requirements replacing a 3 hour free elective.
6. A lab component is being required with the basic science elective to replace the Chemistry I lab that was removed from the freshman year.
7. The total number of hours required for the degree is changing from 127 to 126 due to the implementation of the Freshman Year.

Check if either of these boxes apply and provide the necessary signature:
\(\square\) Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here:

Check all the boxes that apply and complete the required sections of the form:
\(\square\) Change of Name and Code (Complete only sections I, II, V and VII.)
®Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
\(\boxtimes\) Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

\section*{SECTION VI: Justification}

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
This change is being implemented to accommodate the changes in the freshman year proposed by the College of Engineering. The change will not affect any other degree program outside the college.

\section*{SECTION VII: Catalog Text and Format}

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section \(V\) will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:
- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
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Attachment 3D1.doc

For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

\section*{CURRENT CATALOG:}

\section*{COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE)}

Jerry Yeargan
Head of the Department
311 Engineering Hall
479-575-6197
- Distinguished Professor Yeargan
- Professors Crisp, Deaton, Skeith, Thompson (C.)
- Associate Professors Apon, Beavers, Li, Lusth, Panda, Parkerson, Thompson (D.)
- Assistant Professors Di, Hexmoor
- Instructor Baker
- Emeritus Professor Starling
- Emeritus Instructor Johnson

The faculty of the Computer Science and Computer Engineering department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: high performance and scientific computing, grid computing, agents, middleware, networking, data security, nanotechnology, graph theory, and subsystem design.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

Since almost all of today's complex systems encompass hardware and software elements, the computer engineering degree (CENG) has required sequences of courses in both hardware and software aspects of computer applications and design. Computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design.

A degree in computer science (CSCE) provides unique diversity in career choices. Computer science graduates can design, implement, or manage computer systems, as well as adapt computers to new applications. Computer science core courses include the fundamentals of programming concepts, data structures, operating systems, algorithms, formal languages, database management systems, and programming languages.

Humanities and social science electives are selected from courses approved by the College of Engineering. The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The following section contains the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) and the Bachelor of Science in Computer Science (B.S.C.S.) degrees and suggested sequences for each. Computer Engineering Eight-Semester Program

The following section contains the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eightsemester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take ENGL 2023 during the third year or gain exemption.

\section*{Fall Semester 1}
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry1 CHEM 1101L University Chemistry Lab
3 CSCE 1113 Programming Foundations I
1 CSCE 1111L Programming Foundations I Lab
3 ENGL 1013 English Composition
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CSCE 1123 Programming Foundations II
1 CSCE 1121L Programming Foundations II Lab
3 ENGL 1023 Composition II3 MATH 2103 Discrete Math
18 semester hours
Fall Semester 2
4 MATH 2574 Calculus III
4 PHYS 2074 University Physics II
0 PHYS 2070L University Physics II Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2143 Data Structures
3 Humanities/social sciences elective
17 semester hours
Spring Semester 2
4 MATH 3404 Differential Equations
3 ELEG 3933 Circuits and Electronics
3 CENG 2213 Computer Organization
3 CENG 2123 Digital Techniques II
CENG 2120L Digital Techniques II Lab
3 Basic science elective
16 semester hours
Fall Semester 3
3 CENG 3953 Logic Synthesis-VHDL
3 CSCE 3313 Algorithms
3 Technical Elective
3 History/Government requirement
3 Humanities/social sciences elective
15 semester hours
Spring Semester 3
3 CSCE 3613 Operating Systems
3 CSCE 3513 Software Engineering
3 PHIL 3103 Ethics and the Professions
3 Technical Elective
3 STAT 3013 Introduction to Probability and Statistics (INEG 3313 may be substituted)
0-3 ENGL 2003 Advanced Composition or Exemption
15 semester hours
Fall Semester 4
1 CENG 4571 Senior Design Project I
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective
3 Free Elective
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\begin{tabular}{l} 
3 Free Elective \\
\hline 16 semester hours \\
Spring Semester 4 \\
\hline 3 CENG 4973 Senior Design Project II \\
\hline 3 CENG 4213 Intro. to Computer Architecture \\
\hline 3 Technical electives/hardware \\
\hline 3 Technical electives/software \\
\hline 3 Humanities/social sciences elective (3000+) \\
\hline 15 semester hours \\
\hline 127 Total hours \\
Computer Science Eight-Semester Program \\
\hline
\end{tabular}

The following section contains the list of courses required for the Bachelor of Science in Computer Science (B.S.C.S.) degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam. Students must also take ENGL 2023 during the third year or gain exemption.

Computer Science majors are required to take 12 hours of natural science consisting of either PHYS 2054/2050L, PHYS 2074/2070L and CHEM 1103/1101L; or CHEM 1103/1101L, CHEM 1123/1121L and PHYS 2054/2050L.
```

Fall Semester 1
4 MATH 2554 Calculus I
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CSCE 1113 Programming Foundations I
1 CSCE 1111L Programming Foundations I Lab
3 ENGL 1013 English Composition
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 PHYS 2074 University Physics II
0 PHYS 2070L University Physics II Lab
3 CSCE 1123 Programming Foundations II
1 CSCE 1121L Programming Foundations II Lab
3 ENGL 1023 Composition II
3 MATH 2103 Discrete Mathematics
18 semester hours

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Fall Semester 2
3 MATH 3083 Linear Algebra
3 CHEM 1103 University Chemistry I
1 CHEM 1101L University Chemistry I Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2143 Data Structures
3 Humanities/Social sciences elective
16 semester hours
Spring Semester 2
3 MATH 3103, Combinatorics
3 Free elective
3 CENG 2213, Computer Organization
3 Humanities/social sciences elective
3 History/government requirement

\section*{15 semester hours}

Fall Semester 3
3 STAT 3013 Intro to Probability and Statistics
(INEG) 3313 can be substituted)
3 CS Elective
3 CSCE 3313 Algorithms
3 Humanities/social sciences elective
3 Humanities/social sciences elective
15 semester hours
Spring 3
3 CSCE 3613 Operating Systems
3 CSCE 3513 Software Engineering
3 Free elective
3 Free elective
3 PHIL 3103 Ethics \& the Profession
0 ENGL 2003 Advanced Composition or Exemption
15 semester hours
Fall Semester 4
1 CSCE 4561 CS Capstone I
3 CSCE 4313 Programming Languages
3 CSCE 4523 Database Management
3 CS elective
3 Free elective
3 Humanities/social sciences elective
16 semester hours
Spring 4
3 CSCE 4963 CS Capstone II
3 CS elective
3 CSCE 4323 Formal Languages
3 Free elective
3 Humanities/social sciences elective (3000+)
15 semester hours
125 Total hours

\section*{Degree Program Changes}

Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

Requirements for Departmental Honors Computer Science and Computer Engineering
The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering. The program provides a vehicle for the recognition of achievements of work beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies.

The department considers the following requirements necessary for graduation with honors:
1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. A student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 7 hours of Honors credit in the major, which includes 4 hours of Honors Thesis taken as two successive semesters of CSCE 4912H or CENG 4912H and 3 hours of non-thesis.

Requirements for the Bachelor of Arts degree with a Major in Computer Science (B.A.C.S):
At least 30 hours in computer science including CSCE 1113/1111L, CSCE 1123/1121L, CSCE 2143, CSCE 3313, and CSCE 4313 plus 13 hours of electives to be selected from a list of CSCE courses numbered 3000 or higher offered by the department.

The mathematics requirements of the degree are MATH 2043 or MATH 2554, MATH 2103, and MATH 3103. The remaining courses should meet the requirements for a B.A. degree listed in the Fulbright College section.

Requirements for a Minor in Computer Science:
CSCE 1113/1111L, CSCE 1123/1121L, CSCE 2143, CSCE 3313, and either CENG 2213 or CSCE 4313.
SEE PAGE 326 FOR COMPUTER ENGINEERING (CENG) courses AND PAGE 337 FOR Computer Science (CSCE) COURSES

\section*{NEW CATALOG:}

\section*{COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE)}

Jerry Yeargan
Head of the Department
311 Engineering Hall
479-575-6197
- Distinguished Professor Yeargan
- Professors Crisp, Deaton, Skeith, Thompson (C.)
- Associate Professors Apon, Beavers, Li, Lusth, Panda, Parkerson, Thompson (D.)
- Assistant Professors Di, Shen
- Instructor Baker
- Emeritus Professor Starling
- Emeritus Instructor Johnson

The faculty of the Computer Science and Computer Engineering department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: high performance and scientific computing, grid computing, agents, middleware, networking, data security, nanotechnology, graph theory, and subsystem design.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

Since almost all of today's complex systems encompass hardware and software elements, the computer engineering degree (CENG) has required sequences of courses in both hardware and software aspects of computer applications and design. Computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design. The CE program culminates in a senior design project that is a two-semester consecutive course with the first semester forming teams and developing a project proposal. The second semester expands the project to encompass the development, implementation, and presentation of the final project.

A degree in computer science (CSCE) provides unique diversity in career choices. Computer science graduates can design, implement, or manage computer systems, as well as adapt computers to new applications. Computer science core courses include the fundamentals of programming concepts, data structures, operating systems, algorithms, formal languages, database management systems, and programming languages. The CS program culminates in a capstone project that is a twosemester consecutive course with the first semester forming teams and developing a project proposal. The second semester expands the project to encompass the development, implementation, and presentation of the final project.

Humanities and social science electives are selected from courses approved by the College of Engineering. The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) and the Bachelor of Science in Computer Science (B.S.C.S.) degrees and suggested sequences for each.

Computer Engineering Eight-Semester Program:

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam. Students must also take the Advanced Composition exam or ENGL 2003 during the third year.

Fall Semester 1
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry
4 PHYS 2054 University Physics I
0 PHYS 2050L, University Physics I Lab
3 ENGL 1013 English Composition
1 GNEG 1111 Introduction to Engineering I
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 Freshman Science elective*
3 Humanities/social science elective
3 ENGL 1023 Composition II
1 GNEG 1121 Introduction to Engineering II
15 semester hours
Fall Semester 2
4 MATH 2574 Calculus III
4 Basic Science elective
3 CSCE 2003 Programming Foundations I
1 CSCE 2001L Programming Foundations I Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 Humanities/social sciences elective
18 semester hours
Spring Semester 2
4 MATH 3404 Differential Equations
3 MATH 2103 Discrete Math
3 CSCE 2013 Programming Foundations II
1 CSCE 2011L Programming Foundations II Lab
3 CENG 2213 Computer Organization
3 CENG 2123 Digital Techniques II
0 CENG 2120L Digital Techniques II Lab
17 semester hours
Fall Semester 3
3 CENG 3953 Logic Synthesis-VHDL
3 CSCE 3143 Data Structures
3 Technical Elective
3 History/Government requirement
3 PHIL 3103 Ethics \& the Professions
15 semester hours
Spring Semester 3
3 CSCE 3613 Operating Systems
3 CSCE 3313 Algorithms
3 ELEG 3933 Electronics \& Circuits
3 Technical Elective
3 STAT 3013 Introduction to Probability and Statistics (INEG 3313 may be substituted)
15 semester hours

Fall Semester 4
1 CENG 4571 Senior Design Project I
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective
3 CSCE 4513 Software Engineering
3 Free Elective
16 semester hours
Spring Semester 4
3 CENG 4973 Senior Design Project II
3 CENG 4213 Intro. to Computer Architecture
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective (3000+)
15 semester hours
126 Total hours
*Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab
Computer Science Eight-Semester Program:
Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take take the Advanced Composition exam or ENGL 2003 during the third year.
```

Fall Semester 1
4 MATH 2554 Calculus I
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CHEM 1103 University Chemistry I
3 ENGL 1013 English Composition
1 GNEG 1111 Inrodution to Engineering I
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 Freshman Science elective*
1 GNEG 1121 Inttroduction to Engineering II
3 ENGL 1023 Composition II
3 Human/Social Science elective
15 semester hours
Fall Semester 2
3 MATH 2103 Discrete Math
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2003 Programming Foundations I
1 CSCE 2001 Programming Foundations I Lab
4 Basic Science elective with lab
3 History/Government elective
17 semester hours

```

Spring Semester 2
3 MATH 3083 Linear Algebra
3 CSCE 2013 Programming Foundations II

1 CSCE 2011L Programming Foundations II Lab
3 CENG 2213 Computer Organization
3 Humanities/social sciences elective
3 Humanities/social sciences elective
16 semester hours
Fall Semester 3
3 STAT 3013 Intro to Probability and Statistics
(INEG 3313 can be substituted)
3 CSCE 3143 Data Structures
3 MATH 3103 Combinatorics
3 Humanities/social sciences elective
3 Free elective
15 semester hours
Spring 3
3 CSCE 3613 Operating Systems
3 CSCE 3313 Algorithms
3 Free elective
3 Free elective
3 PHIL 3103 Ethics \& the Profession
15 semester hours
Fall Semester 4
1 CSCE 4561 CS Capstone I
3 CSCE 4313 Programming Languages
3 CSCE 4523 Database Management
3 CSCE 4513 Software Engineering
3 CS elective
3 Humanities/social sciences elective
16 semester hours
Spring 4
3 CSCE 4963 CS Capstone II
3 CS elective
3 CSCE 4323 Formal Languages
3 Free elective
3 Humanities/social sciences elective (3000+)
15 semester hours
124 Total hours
*Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab

\section*{Degree Program Changes}

Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

Requirements for Departmental Honors Computer Science and Computer Engineering
The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering. The program provides a vehicle for the recognition of achievements of work beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies.

The department considers the following requirements necessary for graduation with honors:
1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. A student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 7 hours of Honors credit in the major, which includes \(\mathbf{4}\) hours of Honors Thesis taken as two successive semesters of CSCE 4912H or CENG 4912H and 3 hours of non-thesis.

Requirements for the Bachelor of Arts degree with a Major in Computer Science (B.A.C.S):
At least 30 hours in computer science including CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313, and CSCE 4313 plus 13 hours of electives to be selected from a list of CSCE courses numbered 3000 or higher offered by the department.

The mathematics requirements of the degree are MATH 2554, MATH 2103, and MATH 3103. The remaining courses should meet the requirements for a B.A. degree listed in the Fulbright College section.

Requirements for a Minor in Computer Science:
CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313 and either CENG 2213 or CSCE 4313.

SEE PAGE 326 FOR COMPUTER ENGINEERING (CENG) courses AND PAGE 337 FOR Computer Science (CSCE) COURSES

\section*{SECTION VIII: Action Recorded by Registrar's Office}

\section*{PROGRAM INVENTORY/DARS}

PGRM \(\qquad\) SUBJ \(\qquad\)
DGRE \(\qquad\) PGCT \(\qquad\)
\(\qquad\) CRTS \(\qquad\)
OFFC\&CRTY VALID \(\qquad\)

\section*{REPORTING CODES}

PROG. DEF. \(\qquad\) REQ. DEF.
Initials \(\qquad\) Date \(\qquad\)

\section*{Distribution}
(2) Department (3) Admissions
(8) Undergraduate Program Committee
(4) Institutional Research
(5) Continuing Education Initials \(\qquad\) Date \(\qquad\)
(6) Graduate School

\section*{ATTACHMENT 3E ADD, CHANGE OR DELETE PROGRAM OR UNIT}

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

\section*{SECTION I: Approvals}
\begin{tabular}{ll}
\hline Department / Program Chair & Date Submitted \\
\hline College Dean & Date \\
\hline University Course and Programs Committee & Date \\
\hline Graduate Council Chair & Date
\end{tabular}
\begin{tabular}{lc}
\hline Faculty Senate Chair & Date \\
\hline Provost & Date \\
\hline Board of Trustees Approval/Notification Date & \\
\hline Arkansas Higher Education Coordinating Board Approval/Notification Date
\end{tabular}

SECTION II: Profile Data - Required Information and Name Change Information
\begin{tabular}{|c|c|c|}
\hline Academic Unit: \(\quad\) Major/Field of Study & \(\square\) Minor \(\quad \square\) Other Unit & \\
\hline Level: \(\quad\) U Undergraduate & \(\square\) Graduate \(\quad \square\) Law & Effective Catalog Year Fall 2007 \\
\hline Current Name Computer Science & & \\
\hline College, School, Division ENGR & Department Code CSCE & \\
\hline Current Code (6 digit Alpha) CSCEBS & \begin{tabular}{l}
Proposed Code (6 digit Alpha) \\
Prior approval from the Office of the Reg
\end{tabular} & strar is required. \\
\hline \(\square\) Interdisciplinary Program & \begin{tabular}{l}
CIP Code 11.0101 \\
Prior assignment from Office of Institutio
\end{tabular} & al Research is required. \\
\hline
\end{tabular}

Proposed Name \(\qquad\)
When a program name is changed, enrollment of current students reflects the new name.

\section*{SECTION III: Add a New Program/Unit}For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE <http://www.adhe.arknet.edu.aadept.html>.
\(\square\) Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)

\section*{SECTION IV: Eliminate an Existing Program/Unit}

Code/Name \(\qquad\) Effective Catalog Year \(\qquad\)
No new students admitted to program after Term: \(\qquad\) Year: \(\qquad\) -
Allow students in program to complete under this program until Term: \(\qquad\) Year: \(\qquad\)

\section*{SECTION V: Proposed Changes to an Existing Program}

Insert here a statement of the exact changes to be made: The following changes are being implemented to accommodate the introduction of the freshman year changes implemented by the College of Engineering:
1. The course numbers for CSCE 1113/1111L Programming Foundations I and lab change to CSCE 2003/2001L keeping the same course name.
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\section*{2. The course numbers for CSCE 1123/1121L Programming Foundations II and lab change to CSCE 2013/2011L keeping the same course name.}
3. The course number for CSCE 2143 Data Structures is changing to CSCE 3143 keeping the same course name.
4. The course number for CSCE 3513 Software Engineering is changing to CSCE 4513 keeping the same course name.
5. GNEG 1111 Introduction to Engineering I and 1121 Introduction to Engineering II are being added to the program requirements replacing a 3 hour free elective.
6. A science elective with lab ( 4 hours) replaces another 3 hour free elective and the Chemisry I lab that was removed from the freshman year.
7. The total number of hours required for the degree is changing from 125 to 124 due to the implementation of the Freshman Year.

Check if either of these boxes apply and provide the necessary signature:Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here:

Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here: \(\qquad\)
Check all the boxes that apply and complete the required sections of the form:
\(\square\) Change of Name and Code (Complete only sections I, II, V and VII.)
ØChange Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
\(\square\) Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

【Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

\section*{SECTION VI: Justification}

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
This change is being implemented to accommodate the changes in the freshman year proposed by the College of Engineering. The change will not affect any other degree program outside the college.

\section*{SECTION VII: Catalog Text and Format}

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section \(V\) will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:
- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

\section*{CURRENT CATALOG:}

\section*{COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE)}

Jerry Yeargan
Head of the Department
311 Engineering Hall
479-575-6197
- Distinguished Professor Yeargan
- Professors Crisp, Deaton, Skeith, Thompson (C.)
- Associate Professors Apon, Beavers, Li, Lusth, Panda, Parkerson, Thompson (D.)
- Assistant Professors Di, Hexmoor
- Instructor Baker
- Emeritus Professor Starling
- Emeritus Instructor Johnson

The faculty of the Computer Science and Computer Engineering department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: high performance and scientific computing, grid computing, agents, middleware, networking, data security, nanotechnology, graph theory, and subsystem design.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

Since almost all of today's complex systems encompass hardware and software elements, the computer engineering degree (CENG) has required sequences of courses in both hardware and software aspects of computer applications and design. Computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design.

A degree in computer science (CSCE) provides unique diversity in career choices. Computer science graduates can design, implement, or manage computer systems, as well as adapt computers to new applications. Computer science core courses include the fundamentals of programming concepts, data structures, operating systems, algorithms, formal languages, database management systems, and programming languages.

Humanities and social science electives are selected from courses approved by the College of Engineering. The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The following section contains the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) and the Bachelor of Science in Computer Science (B.S.C.S.) degrees and suggested sequences for each. Computer Engineering Eight-Semester Program

The following section contains the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eightsemester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take ENGL 2023 during the third year or gain exemption.
Fall Semester 1
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry
1 CHEM 1101L University Chemistry Lab
3 CSCE 1113 Programming Foundations I
1 CSCE 1111L Programming Foundations I Lab
3 ENGL 1013 English Composition
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CSCE 1123 Programming Foundations II
1 CSCE 1121L Programming Foundations II Lab
3 ENGL 1023 Composition II
3 MATH 2103 Discrete Math
18 semester hours
Fall Semester 2
4 MATH 2574 Calculus III
4 PHYS 2074 University Physics II
0 PHYS 2070L University Physics II Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2143 Data Structures
3 Humanities/social sciences elective
17 semester hours
Spring Semester 2
4 MATH 3404 Differential Equations
3 ELEG 3933 Circuits and Electronics
3 CENG 2213 Computer Organization
3 CENG 2123 Digital Techniques II
0 CENG 2120L Digital Techniques II Lab
3 Basic science elective
16 semester hours
Fall Semester 3
3 CENG 3953 Logic Synthesis-VHDL
3 CSCE 3313 Algorithms
3 Technical Elective
3 History/Government requirement
3 Humanities/social sciences elective
15 semester hours
Spring Semester 3
3 CSCE 3613 Operating Systems
3 CSCE 3513 Software Engineering
3 PHIL 3103 Ethics and the Professions
3 Technical Elective
3 STAT 3013 Introduction to Probability and Statistics (INEG 3313 may be substituted)
0-3 ENGL 2003 Advanced Composition or Exemption
15 semester hours

\section*{Fall Semester 4}
1 CENG 4571 Senior Design Project I
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective
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3 Free Elective
3 Free Elective
16 semester hours
Spring Semester 4
3 CENG 4973 Senior Design Project II
3 CENG 4213 Intro. to Computer Architecture
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective (3000+)
15 semester hours
127 Total hours

```

\section*{Computer Science Eight-Semester Program}

The following section contains the list of courses required for the Bachelor of Science in Computer Science (B.S.C.S.) degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take ENGL 2023 during the third year or gain exemption.
Computer Science majors are required to take 12 hours of natural science consisting of either PHYS 2054/2050L, PHYS 2074/2070L and CHEM 1103/1101L; or CHEM 1103/1101L, CHEM 1123/1121L and PHYS 2054/2050L.

Fall Semester 1
4 MATH 2554 Calculus I
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CSCE 1113 Programming Foundations I
1 CSCE 1111L Programming Foundations I Lab
3 ENGL 1013 English Composition
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 PHYS 2074 University Physics II
0 PHYS 2070L University Physics II Lab
3 CSCE 1123 Programming Foundations II
1 CSCE 1121L Programming Foundations II Lab
3 ENGL 1023 Composition II
3 MATH 2103 Discrete Mathematics
18 semester hours
Fall Semester 2
3 MATH 3083 Linear Algebra
3 CHEM 1103 University Chemistry I
1 CHEM 1101L University Chemistry I Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2143 Data Structures
3 Humanities/Social sciences elective
16 semester hours

\section*{Spring Semester 2}

3 MATH 3103, Combinatorics
3 Free elective
3 CENG 2213, Computer Organization
3 Humanities/social sciences elective

3 History/government requirement
15 semester hours
Fall Semester 3
3 STAT 3013 Intro to Probability and Statistics
(INEG) 3313 can be substituted)
3 CS Elective
3 CSCE 3313 Algorithms
3 Humanities/social sciences elective
3 Humanities/social sciences elective
15 semester hours
Spring 3
3 CSCE 3613 Operating Systems
3 CSCE 3513 Software Engineering
3 Free elective
3 Free elective
3 PHIL 3103 Ethics \& the Profession
0 ENGL 2003 Advanced Composition or Exemption
15 semester hours
Fall Semester 4
1 CSCE 4561 CS Capstone I
3 CSCE 4313 Programming Languages
3 CSCE 4523 Database Management
3 CS elective
3 Free elective
3 Humanities/social sciences elective
16 semester hours
Spring 4
3 CSCE 4963 CS Capstone II
3 CS elective
3 CSCE 4323 Formal Languages
3 Free elective
3 Humanities/social sciences elective (3000+)
15 semester hours
125 Total hours
Degree Program Changes
Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

Requirements for Departmental Honors Computer Science and Computer Engineering
The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering. The program provides a vehicle for the recognition of achievements of work beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies.

The department considers the following requirements necessary for graduation with honors:
1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. A student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 7 hours of Honors credit in the major, which includes 4 hours of Honors Thesis taken as two successive semesters of CSCE 4912H or CENG 4912H and 3 hours of non-thesis.

Requirements for the Bachelor of Arts degree with a Major in Computer Science (B.A.C.S):

At least 30 hours in computer science including CSCE 1113/1111L, CSCE 1123/1121L, CSCE 2143, CSCE 3313, and CSCE 4313 plus 13 hours of electives to be selected from a list of CSCE courses numbered 3000 or higher offered by the department.

The mathematics requirements of the degree are MATH 2043 or MATH 2554, MATH 2103, and MATH 3103. The remaining courses should meet the requirements for a B.A. degree listed in the Fulbright College section.

Requirements for a Minor in Computer Science:
CSCE 1113/1111L, CSCE 1123/1121L, CSCE 2143, CSCE 3313, and either CENG 2213 or CSCE 4313.
SEE PAGE 326 FOR COMPUTER ENGINEERING (CENG) courses AND PAGE 337 FOR Computer Science (CSCE) COURSES

NEW CATALOG:
COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE)

\section*{Jerry Yeargan}

Head of the Department
311 Engineering Hall
479-575-6197
- Distinguished Professor Yeargan
- Professors Crisp, Deaton, Skeith, Thompson (C.)
- Associate Professors Apon, Beavers, Li, Lusth, Panda, Parkerson, Thompson (D.)
- Assistant Professors Di, Shen
- Instructor Baker
- Emeritus Professor Starling
- Emeritus Instructor Johnson

The faculty of the Computer Science and Computer Engineering department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: high performance and scientific computing, grid computing, agents, middleware, networking, data security, nanotechnology, graph theory, and subsystem design.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

Since almost all of today's complex systems encompass hardware and software elements, the computer engineering degree (CENG) has required sequences of courses in both hardware and software aspects of computer applications and design. Computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design. The CE program culminates in a senior design project that is a two-semester consecutive course with the first semester forming teams and developing a project proposal. The second semester expands the project to encompass the development, implementation, and presentation of the final project.

A degree in computer science (CSCE) provides unique diversity in career choices. Computer science graduates can design, implement, or manage computer systems, as well as adapt computers to new applications. Computer science core courses include the fundamentals of programming concepts, data structures, operating systems, algorithms, formal languages, database management systems, and programming languages. The CS program culminates in a capstone project that is a twosemester consecutive course with the first semester forming teams and developing a project proposal. The second semester expands the project to encompass the development, implementation, and presentation of the final project.

Humanities and social science electives are selected from courses approved by the College of Engineering. The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) and the Bachelor of Science in Computer Science (B.S.C.S.) degrees and suggested sequences for each.

Computer Engineering Eight-Semester Program:
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Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take the Advanced Composition exam or ENGL 2003 during the third year.
Fall Semester 1
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry
4 PHYS 2054 University Physics I
0 PHYS 2050L, University Physics I Lab
3 ENGL 1013 English Composition
1 GNEG 1111 Introduction to Engineering I
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 Freshman Science elective*
3 Humanities/social science elective
3 ENGL 1023 Composition II
1 GNEG 1121 Introduction to Engineering II
15 semester hours
Fall Semester 2
4 MATH 2574 Calculus III
4 Basic Science elective
3 CSCE 2003 Programming Foundations I
1 CSCE 2001L Programming Foundations I Lab
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 Humanities/social sciences elective
18 semester hours
Spring Semester 2
4 MATH 3404 Differential Equations
3 MATH 2103 Discrete Math
3 CSCE 2013 Programming Foundations II
1 CSCE 2011L Programming Foundations II Lab
3 CENG 2213 Computer Organization
3 CENG 2123 Digital Techniques II
0 CENG 2120L Digital Techniques II Lab
17 semester hours
Fall Semester 3
3 CENG 3953 Logic Synthesis-VHDL
3 CSCE 3143 Data Structures
3 Technical Elective
3 History/Government requirement
3 PHIL 3103 Ethics \& the Professions
15 semester hours
Spring Semester 3
3 CSCE 3613 Operating Systems
3 CSCE 3313 Algorithms
3 ELEG 3933 Electronics \& Circuits
3 Technical Elective
3 STAT 3013 Introduction to Probability and Statistics (INEG 3313 may be substituted)
15 semester hours
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Fall Semester 4
1 CENG 4571 Senior Design Project I
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective
3 CSCE 4513 Software Engineering
3 Free Elective
16 semester hours
Spring Semester 4
3 CENG 4973 Senior Design Project II
3 CENG 4213 Intro. to Computer Architecture
3 Technical electives/hardware
3 Technical electives/software
3 Humanities/social sciences elective (3000+)
15 semester hours
126 Total hours
*Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab
Computer Science Eight-Semester Program:
Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students who have earned 45 hours must take the Rising Junior Exam.
Students must also take take the Advanced Composition exam or ENGL 2003 during the third year.
```

Fall Semester 1
4 MATH 2554 Calculus I
4 PHYS 2054 University Physics I
0 PHYS 2050L University Physics I Lab
3 CHEM 1103 University Chemistry I
3 ENGL 1013 English Composition
1 GNEG 1111 Inrodution to Engineering I
15 semester hours
Spring Semester 1
4 MATH 2564 Calculus II
4 Freshman Science elective*
1 GNEG 1121 Inttroduction to Engineering II
3 ENGL 1023 Composition II
3 Human/Social Science elective
15 semester hours
Fall Semester 2
3 MATH 2103 Discrete Math
3 CENG 2113 Digital Techniques I
0 CENG 2110L Digital Techniques I Lab
3 CSCE 2003 Programming Foundations I
1 CSCE 2001 Programming Foundations I Lab
4 Basic Science elective with lab
3 History/Government elective
17 semester hours
Spring Semester 2
3 MATH 3083 Linear Algebra

3 CSCE 2013 Programming Foundations II
1 CSCE 2011L Programming Foundations II Lab
3 CENG 2213 Computer Organization
3 Humanities/social sciences elective
3 Humanities/social sciences elective
16 semester hours
Fall Semester 3
3 STAT 3013 Intro to Probability and Statistics
(INEG 3313 can be substituted)
3 CSCE 3143 Data Structures
3 MATH 3103 Combinatorics
3 Humanities/social sciences elective
3 Free elective
15 semester hours
Spring 3
3 CSCE 3613 Operating Systems
3 CSCE 3313 Algorithms
3 Free elective
3 Free elective
3 PHIL 3103 Ethics \& the Profession
15 semester hours
Fall Semester 4
1 CSCE 4561 CS Capstone I
3 CSCE 4313 Programming Languages
3 CSCE 4523 Database Management
3 CSCE 4513 Software Engineering
3 CS elective
3 Humanities/social sciences elective
16 semester hours
Spring 4
3 CSCE 4963 CS Capstone II
3 CS elective
3 CSCE 4323 Formal Languages
3 Free elective
3 Humanities/social sciences elective (3000+)
15 semester hours
124 Total hours
*Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab

## Degree Program Changes

Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

Requirements for Departmental Honors Computer Science and Computer Engineering
The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering. The program provides a vehicle for the recognition of achievements of work beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies.

The department considers the following requirements necessary for graduation with honors:

1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. A student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 7 hours of Honors credit in the major, which includes 4 hours of Honors Thesis taken as two successive semesters of CSCE 4912H or CENG 4912H and 3 hours of non-thesis.

Requirements for the Bachelor of Arts degree with a Major in Computer Science (B.A.C.S):
At least 30 hours in computer science including CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313, and CSCE 4313 plus 13 hours of electives to be selected from a list of CSCE courses numbered 3000 or higher offered by the department.

The mathematics requirements of the degree are MATH 2554, MATH 2103, and MATH 3103. The remaining courses should meet the requirements for a B.A. degree listed in the Fulbright College section.

Requirements for a Minor in Computer Science:
CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313 and either CENG 2213 or CSCE 4313.

## SEE PAGE 326 FOR COMPUTER ENGINEERING (CENG) courses AND PAGE 337 FOR Computer Science (CSCE) COURSES

## SECTION VIII: Action Recorded by Registrar's Office

PROGRAM INVENTORY/DARS

| PGRM_____ $\quad$ SUBJ |  |
| :--- | :--- |
| DGRE | PGCT |

REPORTING CODES
PROG. DEF. $\qquad$
CIP $\qquad$ CRTS

OFFC\&CRTY VALID $\qquad$

Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:

## (1) College

(7) Treasurer
(2) Department (3) Admissions
(8) Undergraduate Program Committee
(4) Institutional Research
(5) Continuing Education Initials $\qquad$ Date
$\qquad$
$\qquad$

## ATTACHMENT 3F ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

## SECTION I: Approvals

| Department / Program Chair | Date Submitted |
| :--- | :--- |
| College Dean | Date |
| University Course and Programs Committee | Date |
| Graduate Council Chair | Date |


| Faculty Senate Chair | Date |
| :--- | :---: |
| Provost | Date |
| Board of Trustees Approval/Notification Date |  |
| Arkansas Higher Education Coordinating Board Approval/Notification Date |  |

SECTION II: Profile Data - Required Information and Name Change Information

| Academic Unit: | 】 Major/Field of Study | $\square$ Minor | $\square$ Other Unit |  |
| :---: | :---: | :---: | :---: | :---: |
| Level: | 【 Undergraduate | $\square$ Graduate | $\square$ Law | Effective Catalog Year $\underline{\underline{2007}}$ |
| Current Name | Bachelor of Science in Electrical Engineering |  |  |  |
| College, School, Division E | ENGR | Department Code ELEG |  |  |
| Prior approval from the Office of the Registrar is required. |  |  |  |  |
| $\square$ Interdisciplinary Program |  | CIP Code 14 <br> Prior assignment | 1 Office of Institut | nal Research is required. |

Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).$\square$ Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$

## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$ -
Allow students in program to complete under this program until Term: $\qquad$ Year: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made: The proposed changes in the ELEGBS are required to align the program with the common freshman year adopted by the College of Engineering. This common freshman year will be implemented for the first time in the Fall 2007. The proposed changes are the following: (1) Adopt the common freshman year for the first two semesters by adding GNEG 1111 and GNEG 1121.
1622.20A p/vcaa 10/1/00
C:\program files\qualcomm\eudora\attach\UCPC December 2006 - ELEGBS -
Attachment 3F.doc
(2) Move ELEG 1903 and ELEG 1913 to the sophomore year (these courses are also renamed ELEG 2903 and ELEG 2913).
(3) Move CSCE 1113 and CSCE 1123 to the second semester of the sophomore year and the first semester of the junior year. These courses will be CSCE 2003 and CSCE 2013; new courses numbers assigned by the CSCE Department.
(4) Renumber ELEG 3143 to ELEG 4143 since it is in the senior year of the program.

As a result of the common freshman year, the BSELEG program will have 131 hours $\mathbf{~} 2$ more than the current BSELEG program).

Check if either of these boxes apply and provide the necessary signature:
Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here:

Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$
Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
区Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

【Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
The College of Engineering has adopted a common freshman year to be implemented for the first time in the Fall 2007. As a result of these changes in the freshman year, the department is changing its current eight-semester degree completion plan. These changes will not affect any other degree program.

## SECTION VII: Catalog Text and Format

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section $V$ will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

## CURRENT CATALOG TEXT: <br> ELECTRICAL ENGINEERING CURRICULUM


Attachment 3F.doc

| 3 | GNEG 1103 | Intro to Engineering | 3 | ENGL 1023 | Technical Composition II |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 3 | ENGL 1013 | Composition I | 4 | MATH 2564 | Calculus II |
| 4 | MATH 2554 | Calculus I | 3 | ELEG 1913 | Digital Design II |
| 3 | ELEG 1903 | Digital Design I | 0 | ELEG 1910L | Digital Design II Lab |
| 0 | ELEG 1900L | Digital Design I Lab | 4 | PHYS 2054 | University Physics I |
| 3 | History/Government Requirement |  | 0 | PHYS 2050L | University Physics I Lab |
|  |  |  | 3 | Humanities/Social Science elective |  |
|  |  |  |  |  |  |
| 16 | semester hours |  | 17 | semester hours |  |

Sophomore Year (1)

| 3 | CSCE | 1113 | Programming Foundations I | 3 | CENG | 1123 | Programming Foundations II |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | CSCE | 1111L | Prog. Found. I Lab | 1 | CENG | 1121L | Prog. Found. II Lab |
| 3 | ELEG | 2103 | Electric Circuits I | 4 | Math/Science Elective |  |  |
| 1 | ELEG | 2101L | Electric Circuits I Lab | 3 | ELEG | 2113 | Electric Circuits II |
| 4 | MATH | 2574 | Calculus III | 1 | ELEG | 2111L | Electric Circuits II Lab |
| 4 | PHYS | 2074 | University Physics II | 4 | MATH 3404 | Differential Equations |  |
| 0 | PHYS | 2070L | University Physics II Lab |  |  |  |  |


| 16 | semester hours | 16 | semester hours |
| :--- | :--- | :--- | :--- | :--- |



TOTAL: 129 semester hours
(1) Students who have earned 45 hours must take the Rising Junior Exam
(2) Students are required to take ENGL 2003 or gain exemption

## PROPOSED CATALOG TEXT:

## ELECTRICAL ENGINEERING CURRICULUM

2007-2008

Attachment 3F.doc


## TOTAL: 131 semester hours

(1) Freshman Science Elective - CHEM 1123/1121L - University Chemistry II or PHYS 2074 - University Physics II
(2) Students who have earned 45 hours must take the Rising Junior Exam
(3) PHYS 2074 if student took CHEM 1123/1121L in Freshman Year. Otherwise, CHEM1123/1121L or approved 4 hours in Science
(4) Students are required to take ENGL 2003 or gain exemption

## SECTION VIII: Action Recorded by Registrar's Office

## PROGRAM INVENTORY/DARS

PGRM $\qquad$ SUBJ $\qquad$ CIP $\qquad$ CRTS $\qquad$
DGRE $\qquad$ PGCT $\qquad$
REPORTING CODES
PROG. DEF. $\qquad$ REQ. DEF.
Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:
(1) College
$\begin{array}{ll}\text { (2) Department } & \text { (3) Admissions }\end{array}$
(8) Undergraduate Program Committee
(7) Treasurer
(4) Institutional Research
(5) Continuing Education
(6) Graduate School

## ATTACHMENT 3G ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals


Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).
## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$
Allow students in program to complete under this program until Term: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made: Adjust the course requirements for the BSIE degree to accommodate the introduction of the Freshman Engineering Program in the College of Engineering (slated to begin in Fall 2007). This requires
a) adding GNEG 1111 and GNEG 1121 to the first two semesters, respectively, as they are new additions to the Freshmen Engineering Program
b) renumbering of INEG 1403 to 2403 in order to denote its new intended semester that students should take the course ( $4^{\text {th }}$ semester--course is moving to $4^{\text {th }}$ semester from its current $2^{\text {nd }}$ semester)
c) renumbering of INEG 1103 to 2101 , as much of the current course content in 1103 will be covered by the two GNEG Intro to Engineering courses in the Freshman Engineering Program. As there is still some INEG-specific content we wish to convey
to our students, the course hours are being reduced from 3 to 1 and the course is to be taken in a student's $3^{\text {rd }}$ semester, thereby facilitating the need to renumber the course to 2101 (course is moving to $3^{\text {rd }}$ semester from its current $1^{\text {st }}$ semester) d) Deleting the requirement of CHEM 1101L from the current degree program in order to align with the required first year courses in the Freshman Engineering Program
e) Adding CSCE 1111L and CSCE 1121L to the required course list, as the CSCE department requires all students who take their programming courses to register for these labs. As our students are required to take the labs, it is appropriate to include these two hours in our 8 semester degree plan.

Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
ØChange Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

【Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
The introduction of the Freshman Engineering Program in the College of Engineering in Fall 2007 requires INEG to adjust our current 8 semester degree completion plan. The Freshmen Engineering Program has a common first-year experience for all students with a fixed set of required courses to be taken by each new engineering student in their first two semesters. This program change represents the necessary changes to the current BSIE degree requirements in order to accommodate the Freshman Engineering Program. These changes will not affect any other degree program in the College of Engineering. SECTION VII: Catalog Text and Format
Insert the current catalog text and the proposed catalog text. Be sure that the proposed text includes all the elements listed below in order. Do not include university requirements or college requirements. Do not substitute a sample schedule for an explicit statement of requirements. Use standard terms and vocabulary (see Academic Policy 1621.10).

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

## CURRENT CATALOG TEXT:

The total graduation requirement in industrial engineering is 128 hours. For further information please visit us on the World Wide Web at http://www.ineg.uark.edu/.

3 INEG 1103 Principles of Indust Engr
4 MATH 2554 Calculus I
3 ENGL 1013 Composition I
3 CHEM 1103 University Chemistry I
1 CHEM 1101L Univ Chemistry I Lab
14 semester hours
Second Semester
4 MATH 2564 Calculus II
3 INEG 1403 Industrial Cost Analysis
3 ENGL 1023 Technical Composition II
3 Science elective
13 semester hours
Sophomore Year - First Semester
4 MATH 2574 Calculus III
3 Computer Elective I
3 INEG 3313 Engineering Statistics
4 PHYS 2054 University Physics I
3 ECON 2143 Basic Economics
17 semester hours
Second Semester
4 MATH 3404 Differential Equations
3 Computer Elective II
4 PHYS 2074 University Physics II
3 INEG 3413 Eng Economic Analysis
3 INEG 3333 Industrial Statistics
17 semester hours
Junior Year - First Semester
3 INEG 3713 Methods and Standards
3 INEG 4623 Intro. to Simulation
3 Engineering Science Elective I
3 ELEG 3903 Electric Circuits and Machines
3 INEG 3513 Manuf Design and Processes
3 (History or government requirement:
HIST 2003, HIST 2013, or PLSC 2003)
18 semester hours
Second Semester
3 INEG 3613 Intro. to Operations Research
3 Engineering Science Elective II
3 INEG 4523 Automated Production
3 Engineering Science Elective III
3 Humanities/social science electives
15 semester hours

| Senior Year - First Semester |
| :--- |
| 3 INEG 4433 Sys Engineering and Management |

(An upper-level ROTC course may be substituted.)
3 INEG 4543 Materials Handling
3 Technical elective
3 INEG 4723 Ergonomics
6 Humanities/social science electives
18 semester hours
Second Semester
3 INEG 4553 Production Planning/ Control
4 INEG 4904 I.E. Design

3 Humanities/social science elective
6 Technical electives
16 semester hours

## 128 Total hours required

Technical Electives
The purpose of technical electives is to provide students with the opportunity to expand their education along lines of particular interest to them. The approved list of technical electives is available in the industrial engineering department. At least three hours must be selected from INEG courses.
Humanities/Social Science Electives
Although any elective included on the humanities/social science list may be selected, PSYC 2003 General Psychology is recommended for industrial engineers.

## Science Elective

The approved list of science electives is available in the industrial engineering departmental office.

## Computer Elective

The approved list of computer electives is available in the industrial engineering departmental office. Engineering Science Electives
The approved list of engineering science electives is available in the industrial engineering departmental office.

## PROPOSED CATALOG TEXT:

The total graduation requirement in industrial engineering is $\mathbf{1 2 9}$ hours. For further information please visit us on the World Wide Web at http://www.ineg.uark.edu/.

INDUSTRIAL ENGINEERING PROGRAM
Freshman Year - First Semester
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry I
4 PHYS 2054 University Physics I
1 GNEG 1111 Intro to Engineering I
3 ENGL 1013 Composition I
15 semester hours

## Second Semester

4 MATH 2564 Calculus II
4 Freshman Science elective1
3 Humanities/social science elective
1 GNEG 1121 Intro to Engineering II
3 ENGL 1023 Technical Composition II
15 semester hours
Sophomore Year - First Semester
4 MATH 2574 Calculus III
3 INEG 3413 Eng Economic Analysis
1 INEG 2101 Principles of Indust Engr
3 INEG 3313 Engineering Statistics
4 CSCE 1113/1111L Prog Foundation I
15 semester hours

Second Semester
4 MATH 3404 Differential Equations
3 INEG 2403 Industrial Cost Analysis
3 Science Requirement2
3 INEG 3333 Industrial Statistics
4 CSCE 1123/1121L Prog Foundation II
17 semester hours

Junior Year - First Semester
3 INEG 3713 Methods and Standards
3 INEG 4623 Intro. to Simulation
3 Engineering Science Elective I3
3 ELEG 3903 Electric Circuits and Machines
3 History or Government Requirement 6
3 INEG 3513 Manuf Design and Processes
18 semester hours
Second Semester
3 INEG 3613 Intro to Operations Research
3 INEG 3523 Manufacturing Systems
3 Engineering Science Elective II4
3 Engineering Science Elective III5
3 ECON 2143 Basic Economics
15 semester hours
Senior Year - First Semester
3 INEG 44XX Management Requirement7
3 INEG 4543 Materials Handling
3 INEG 4723 Ergonomics
3 Technical elective8
6 Humanities/social science electives
18 semester hours
Second Semester
4 INEG 4904 I.E. Design
3 INEG 4553 Prodn Planning/Control
6 Technical electives
3 Humanities/social science elective
16 semester hours

## 129 Total hours required

Notes:

1) CHEM 1123/1121L University Chemistry II or PHYS 2074 University Physics II
2) If the student selected CHEM 1123/1121L as their freshman science elective then this must be PHYS 2074 University Physics II, else please see the approved list of IE science electives.
3) Engineering Science 1 (MEEG 2003 Statics or MEEG 2023 Intro. to Mech.)
4) Engineering Science 2 (If ES 1 = MEEG 2003, then ES 2 = MEEG 3013), (If ES 1 = MEEG 2023, then ES 2 = MEEG 2303)
5) Engineering Science 3 (CHEG 2133 Mom. Trans. or MEEG 2403 Thermo, or CHEG 2313 Thermo)
6) History or government requirement HIST 2003, 2013 or PLSC 2003 should be taken at this time
7) Either INEG 4433 Systems Engineering \& Management or INEG 4443 Project Management
8) Please consult the approved technical elective list. At least 3 hours must be selected from INEG courses

## Technical Electives

The purpose of technical electives is to provide students with the opportunity to expand their education along lines of particular interest to them. The approved list of technical electives is available in the industrial engineering department. At least three hours must be selected from INEG courses.
Humanities/Social Science Electives
Although any elective included on the humanities/social science list may be selected, PSYC 2003 General Psychology is recommended for industrial engineers.

## Science Elective

The approved list of science electives is available in the industrial engineering departmental office.
Computer Elective
The approved list of computer electives is available in the industrial engineering departmental office. Engineering Science Electives
The approved list of engineering science electives is available in the industrial engineering departmental office..

## SECTION VIII: Action Recorded by Registrar's Office

## PROGRAM INVENTORY/DARS

PGRM $\qquad$
DGRE $\qquad$
SUBJ $\qquad$

CIP $\qquad$ CRTS $\qquad$
OFFC\&CRTY VALID $\qquad$
REPORTING CODES

PROG. DEF. $\qquad$
$\qquad$

REQ. DEF.

Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:
(1) College
(7) Treasurer
(2) Department
(3) Admissions
(8) Undergraduate Program Committee
(4) Institutional Research
(5) Continuing Education
(6) Graduate School

## ATTACHMENT 3H <br> ADD, CHANGE OR DELETE PROGRAM OR UNIT

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals

| Department / Program Chair | Date Submitted |
| :--- | :--- |
| College Dean | Date |
| University Course and Programs Committee | Date |
| Graduate Council Chair | Date |


| Faculty Senate Chair | Date |
| :--- | :---: |
| Provost | Date |
| Board of Trustees Approval/Notification Date |  |
| Arkansas Higher Education Coordinating Board Approval/Notification Date |  |

SECTION II: Profile Data - Required Information and Name Change Information

| Academic Unit: | 】 Major/Field of Study | $\square$ Minor | $\square$ Other Unit |  |
| :---: | :---: | :---: | :---: | :---: |
| Level: X | X Undergraduate | $\square$ Graduate | $\square$ Law | Effective Catalog Year Fall 2007 |
| Current Name B | Bachelor of Science in Mechanical Engineering |  |  |  |
| College, School, Division E | ENGR | Department Code MEEG |  |  |
| Prior approval from the Office of the Registrar is required. |  |  |  |  |
| $\square$ Interdisciplinary Program |  | CIP Code 14 <br> Prior assignment | 1 Office of Instituti | al Research is required. |

Proposed Name $\qquad$
When a program name is changed, enrollment of current students reflects the new name.

## SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE [http://www.adhe.arknet.edu.aadept.html](http://www.adhe.arknet.edu.aadept.html).$\square$ Program proposal uses courses offered by another academic college. The signature of the dean of that academic college is required here: $\qquad$

## SECTION IV: Eliminate an Existing Program/Unit

Code/Name $\qquad$ Effective Catalog Year $\qquad$
No new students admitted to program after Term: $\qquad$ Year: $\qquad$
Allow students in program to complete under this program until Term: $\qquad$ Year: $\qquad$

## SECTION V: Proposed Changes to an Existing Program

Insert here a statement of the exact changes to be made: Adjust the course requirements for the BSME degree to accommodate the introduction of the Freshman Engineering Program in the College of Engineering (slated to begin in Fall 2007). This requires a) eliminating MEEG 1103 in the first semester freshman year; b) eliminating CHEM 1101L in the first semester freshman year; c) moving GNEG 1122 from the first semester freshman year to the first semester sophomore year; d) adding GNEG 1111 to the first semester freshman year; e) adding GNEG 1121to the second semester freshman year; f)
 Attachment 3H1.doc
moving PHYS 2054 from the second semester freshman year to the first semester freshman year; g) moving PHYS 2074 from the first semester sophomore year to the second semester freshman year; $h$ ) dropping the requirement of completing CHEM 1123 and 1121 L in the second semester freshman year; i) adding a four hour lab based science elective to the first semester sophomore year; i) moving a humanistic/social course from the first semester junior year to the second semester freshman year $k$ ) adding a two hour MEEG elective in the junior year first semester.

Check if either of these boxes apply and provide the necessary signature:
Program change proposal adds courses offered by another academic college. The signature of the dean of that academic college is required here:

Program change proposal deletes courses offered by another academic college. The signature of the dean of that academic college is required here:

Check all the boxes that apply and complete the required sections of the form:
$\square$ Change of Name and Code (Complete only sections I, II, V and VII.)
】Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
$\square$ Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)

## SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)
The introduction of the Freshman Engineering Program in the College of Engineering in Fall 2007 requires MEEG to adjust our current 8 semester degree completion plan. The Freshmen Engineering Program has a common first-year experience for all students with a fixed set of required courses to be taken by each new engineering student in their first two semesters. This program change represents the necessary changes to the current BSME degree requirements in order to accommodate the Freshman Engineering Program.

## SECTION VII: Catalog Text and Format

Insert the current catalog text, with proposed changes identified in Section V inserted and tracked in Microsoft Word. Be sure that all proposed changes are inserted and tracked. Only changes explicitly stated in Section $V$ will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.

For minors, state requirements in terms of hours, required courses, electives, etc.
For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.
For Law School program/units, prepare text consistent with current catalog style.
For centers, prepare text consistent with current catalog style.

## CURRENT CATALOG TEXT:

The total graduation requirement in mechannical engineering is $\mathbf{1 2 4}$ hours. For further information please visit us on the World Wide Web at http://www.meeg.uark.edu/.

## MECHANICAL ENGINEERING PROGRAM

Freshman Year - First Semester
3 CHEM 1103 University Chemistry I
1 CHEM 1101L University Chemistry I Lab
4 MATH 2554 Calculus I
3 ENGL 1013 Compsition I
2 GNEG 1122 Introduction CAD
3 MEEG 1103 Intro. to Mechanical Engineering

## 16 SEMESTER HOURS

Freshman Year - Second Semester
3 CHEM 1123 Univ Chemistry II
1 CHEM 1121L Univ Chemistry II Lab
4 MATH 2564 Calculus II
3 ENGL1023 Tech Composition
4 PHYS 2054 Univ Phyics I \& Lab
15 Semester Hours
Sophomore Year - First Semester
3 MEEG 2303 Intro to Materials
4 MATH 2574 Calculus III
3 MEEG 2003 Statics
4 PHYS 2074 Univ Physics II \& Lab
14 Semester Hours
Sophomore Year - Second Semester
3 MEEG 2403 Thermodynamics
4 MATH 3404 Differential Equations
3 MEEG 2703Comp. Methods
3 MEEG 2013 Dynamics
3 ELEG 3903 Circuits \& Machines

## 16 Semester Hours

Junior Year - First Semester
3 MEEG 3503 Mechanics of Fluids
3 MEEG 3113 Machine Dynamics \& Control
3 MEEG 3013 Mechanics of Materials
2 MEEG 3202 Mechanical Engineering Laboratory I
3 ELEG 3913 Engineering Electronics
3 Humanities/Social Science Elective (History or Gov. Requirement)

## 17 Semester Hours

Junior Year - Second Semester
3 MEEG 4413 Heat Transfer
3 MEEG 4103 Machine Element Design
2 MEEG 3212 Mechanical Engineering Laboratory II
3 Technical/Science Elective
3 ECON 2143 or ECON 2013
3 Humanities/Social Science Elective (Lover Level)

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Senior Year - First Semester
3 MEEG 4483 Thermal Systems Analysis and Design
0 ENGL 2003 Advanced Composition or Exemption
2 MEEG 4132 Professianal Engineering Practices
1 MEEG 4131 Creative Project Design I
2 MEEG 4202 Mechacnical Engineering Laboratory III
3 Technical/Science Elective
3 Humanities/Social Science Elective (3000-4000) Level
14 Semester Hours
Senior Year - Second Semester
3 Technical/Science Elective
3 Technical/Science Elective
3 MEEG 4133 Creative Project Design II
3 Humanities/Social Science Elective Lower Level
3 Humanities/Social Science Elective (3000-4000) Level
15 Semester Hours
124 Total hours required
```


## PROPOSED CATALOG TEXT:

The total graduation requirement in mechanical engineering is 124 hours. For further information please visit us on the World Wide Web at http://www.meeg.uark.edu/.

## MECHANICAL ENGINEERING PROGRAM

Freshman Year - First Semester
4 MATH 2554 Calculus I
3 CHEM 1103 University Chemistry I
4 PHYS 2054 University Physics I
1 GNEG 1111 Intro to Engineering I
3 ENGL 1013 Composition I
15 semester hours
Freshman Year - Second Semester
4 MATH 2564 Calculus II
4 Freshman Science elective Note 1
3 Humanities/social science elective
1 GNEG 1121 Intro to Engineering II
3 ENGL 1023 Technical Composition II
15 semester hours
Sophomore Year - First Semester
3 MEEG 2303 Intro to Materials
4 MATH 2574 Calculus III
3 MEEG 2003 Statics
4 Science Elective Notes 1,2
2 GNEG 1122 CAD
16 Semester Hours
Sophomore Year - Second Semester
3 MEEG 2403 Thermodynamics

4 MATH 3404 Differential Equations
3 MEEG 2703Comp. Methods
3 MEEG 2013 Dynamics
3 ELEG 3903 Circuits \& Machines
16 Semester Hours
Junior Year - First Semester
3 MEEG 3503 Mechanics of Fluids
3 MEEG 3113 Machine Dynamics \& Control
3 MEEG 3013 Mechanics of Materials
2 MEEG 3202 Mechanical Engineering Laboratory I
3 ELEG 3913 Engineering Electronics
2 MEEG Elective Note 3
16 Semester Hours
Junior Year - Second Semester
3 MEEG 4413 Heat Transfer
3 MEEG 4103 Machine Element Design
2 MEEG 3212 Mechanical Engineering Laboratory II
3 Technical/Science Elective Note 4
3 ECON 2143 or ECON 2013
3 Humanities/Social Science Elective (Lover Level) Note 5
17 Semester Hours
Senior Year - First Semester
3 MEEG 4483 Thermal Systems Analysis and Design
0 ENGL 2003 Advanced Composition or Exemption
2 MEEG 4132 Professianal Engineering Practices
1 MEEG 4131 Creative Project Design I
2 MEEG 4202 Mechacnical Engineering Laboratory III
3 Technical/Science Elective Note 4
3 Humanities/Social Science Elective (3000-4000) Level Note 5
14 Semester Hours
Senior Year - Second Semester
3 Technical/Science Elective Note 4
3 Technical/Science Elective Note 4
3 MEEG 4133 Creative Project Design II
3 Humanities/Social Science Elective Lower Level Note 5
3 Humanities/Social Science Elective (3000-4000) Level Note 5
15 Semester Hours

124 Total hours required

Notes:

1) The science elective in the freshman year second semester or the science elective in the sophomore year first semester must include PHYS 2074.
2) Science elective from an approved list. See MEEG office.
3) Two hour MEEG elective from an approved list. See MEEG office.
4) Three hours of technical / science elective from an approved list. See MEEG office.
5) Humanities / Social Science elective from an approved list. See MEEG office

## SECTION VIII: Action Recorded by Registrar's Office

PROGRAM INVENTORY/DARS

PGRM $\qquad$
DGRE $\qquad$

SUBJ $\qquad$
PGCT $\qquad$
$\qquad$ CRTS $\qquad$

OFFC\&CRTY VALID $\qquad$

PROG. DEF. $\qquad$ REQ. DEF.
Initials $\qquad$ Date $\qquad$

## Distribution

Notification to:
(1) College
(2) Department (3) Admissions
(8) Undergraduate Program Committee
(4) Institutional Research
(5) Continuing Education
(6) Graduate School
(7) Treasurer

