Code #EN22 (2014)

**Bulletin Change Transmittal Form**

**Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.

**Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to [pheath@astate.edu](mailto:pheath@astate.edu)

|  |
| --- |
| **Bulletin Change** Please attach a copy of all catalogue pages requiring editorial changes. |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **General Education Committee Chair (If applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

**1.Contact Person** (Name, Email Address, Phone Number)

Shubhalaxmi Kher, Ph.D., skher@astate.edu, 870-972-3224

Brandon Kemp, Ph. D., bkemp@astate.edu, 870-972-2088

**2.Proposed Change**

* Change name of Course EE 4303 Engineering Field and Waves II to EE 4303 Electromagnetic Waves.
* Course Description
  + Old Description: Study of electromagnetic waves in free space, dielectrics, and conductors, transmission lines, polarization, reflection, refraction, diffraction, waveguides, resonators, antennas, and radiation.
  + New Description: Study of time harmonic electromagnetic wave interaction with materials including energy and momentum, polarization, reflection, refraction, waveguides, radiation, and scattering.
* Prerequisite change
  + Old Prerequisites, C or better in MATH 4403 and EE 3343.
  + New Prerequisite, C or better in EE 3343 or PHYS 2044, and MATH 4403.

**3.Effective Date**

8/1/2015

**4.Justification**

The updated version of the course will cover electromagnetic waves using a modern approach from first principles. It is intended for students with an introduction to field theory (EE EE43 or PHYS 2044) and a working knowledge of differential equations (MATH 4403). Since electromagnetic waves are in involved in multidisciplinary applications in engineering, EE 4303 Electromagnetic Waves will be accessible to students across multiple disciplines. Addition of the alternate physics prerequisite (PHYS 2044) will allow students in mechanical engineering, physics, math, etc. to enroll in the course.

**From the most current electronic version of the bulletin, copy all bulletin pages that this proposal affects and paste it to the end of this proposal.**

**To copy from the bulletin:**

1. Minimize this form.
2. Go to <http://registrar.astate.edu/bulletin.htm> and choose either undergraduate or graduate.
3. This will take you to a list of the bulletins by year, please open the most current bulletin.
4. Find the page(s) you wish to copy, click on the “select” button and highlight the pages you want to copy.
5. Right-click on the highlighted area.
6. Click on “copy”.
7. Minimize the bulletin and maximize this page.
8. Right-click immediately below this area and choose “paste”.
9. For additions to the bulletin, please change font color and make the font size larger than the surrounding text. Make it noticeable.
10. For deletions, strike through the text, change the font color, and enlarge the font size. Make it noticeable.

Page 444, 2014-15 Undergraduate Bulletin

**EE 3401. Electronics I Laboratory**   Basic laboratory experiments in electronic circuits and

solid state electronic devices. Corequisite, EE 3403. Prerequisite, C or better in ENGR 2421. Fall.

EE 3403. Electronics I  Theory, analysis, and introductory design of diode, bipolar junction

transistor, operational amplifier, and field effect transistor devices and circuits. Prerequisite, C or

better in ENGR 2423. Fall.

**EE 4303. ~~Engineering Field and Waves II~~ Electromagnetic Waves** ~~Study of electromagnetic waves in free space, dielectrics, and conductors, transmission lines, polarization, reflection, refraction, diffraction, waveguides, resonators, antennas, and radiation. Prerequisites, C or better in MATH 4403 and EE 3343. Dual listed as EE 5303. Demand.~~Study of time harmonic electromagnetic wave interaction with materials including energy and momentum, polarization, reflection, refraction, waveguides, radiation, and scattering. Prerequisites, C or better in (EE 3343 or PHYS 2044) and MATH 4403. Dual listed as EE 5303. Spring, odd.

**EE 4313. Control Systems** Analysis and design of linear feedback systems. Transfer functions,

transient and steady state characterization, stability determination. Closed loop analysis and

design using root locus and frequency domain methods. Prerequisites, C or better in EE 3403.

Corequisite, EE 3353. Dual listed as EE 5313. Demand.