**Application Form For Opening Graduate Courses**

School (Department/Institute)：School of Information Science and Engineering

Course Type: New Open □ Reopen√ Rename □**（**Please tick in □, the same below）

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course Name | | Chinese | 射频集成电路设计基础 | | | | | | | | | | |
| English | An Introduction to RFIC Design | | | | | | | | | | |
| Course Number | | | S004404 | | | Type of Degree | | | Ph. D |  | Master | | √ |
| Total Credit Hours | | | 54 | In Class Credit Hours | 54 | | Credit | 3 | Practice |  | Computer-using Hours | |  |
| Course Type | | | □Public Fundamental √ Major Fundamental □Major Compulsory □Major Elective | | | | | | | | | | |
| School (Department) | | | School of Information | | | Term | | Fall | | | | | |
| Examination | | | A. √ Paper（□ Open-book √ Closed-book） B. □Oral  C. □Paper-oral Combination D. □ Others | | | | | | | | | | |
| Chief  Lecturer | Name | | Zhiqun LI | | | Professional Title | | Professor | | | | | |
| E-mail | | [zhiqunli@seu.edu.cn](mailto:zhiqunli@seu.edu.cn) | | | Website | | http://iroi.seu.edu.cn/teachers/ | | | | | |
| Teaching Language used in Course | | | Chinese | | | Teaching Material Website | | http://iroi.seu.edu.cn/teachers/ | | | | | |
| Applicable Range of Discipline | | | Circuits and Systems | | | | | Name of First-Class Discipline | | Electronic Science and Technology | | | |
| Number of Experiment | | | 4 | | | Preliminary Courses | | Electronic (Analog) Circuits, Microwave Engineering, Radio/Digital Communication | | | | | |
| Teaching Books | | | Textbook Title | | | Author | | Publisher | | Year of Publication | | Edition Number | |
| Main Textbook | | | RFIC and System | | | Zhiqun LI  Zhigong WANG | | Science Publishing House | | 2008 | | 1 | |
| Main Reference Books | | | The Design of CMOS Radio Frequency Integrated Circuits | | | Thomas H. Lee | | Cambridge University Press | | 1998 | |  | |
| RF Microelectronics | | | Behzad Razavi | | Prentice Hall | | 1998 | |  | |
| Microwave Transistor Amplifiers: Analysis and Design | | | Guillermo Gonzalez | | Prentice Hall | | 1997 | |  | |

1. **Course Introduction (including teaching goals and requirements) within 300 words:**

This course is designed for junior postgraduate students majoring in circuits and systems. It is also applicable to senior undergraduate students and engineers. The course material covers radio transceiver architectures, key building blocks, high frequency integrated circuit design fundamentals and the latest progress and trend in the research area. The ultimate goal is to establish necessary background and motivation that enable the audience for more advanced research and develop work.

1. **Teaching Syllabus (including the content of chapters and sections. A sheet can be attached):**
2. Introduction
3. RF and Microwave Basis
4. Passive Components
5. Noise and Nonlinearities
6. Wireless Transceiver Architectures
7. RF Amplifiers
8. Low Noise Amplifiers
9. Mixers
10. RF power amplifiers
11. Oscillators
12. PLL and Frequency Synthesizers
13. **Teaching Schedule:**

|  |  |  |
| --- | --- | --- |
| Week | Course Content | Teaching Method |
| 1 | Introduction | Teaching |
| 2 | RF and Microwave Basis | Teaching |
| 3 | RF and Microwave Basis | Teaching |
| 4 | Passive Components | Teaching |
| 5 | Noise and Nonlinearities | Teaching |
| 6 | Noise and Nonlinearities | Teaching |
| 7 | Wireless Transceiver Architectures | Teaching |
| 8 | RF Amplifiers | Teaching |
| 9 | RF Amplifiers | Teaching |
| 10 | Low Noise Amplifiers | Teaching |
| 11 | Mixers | Teaching |
| 12 | RF power amplifiers | Teaching |
| 13 | Oscillators | Teaching |
| 14 | PLL and Frequency Synthesizers | Teaching |
| 15 | -- |  |
| 16 | Review | Teaching |
| 17 |  |  |
| 18 |  |  |

Note: 1.Above one, two, and three items are used as teaching Syllabus in Chinese and announced on the Chinese website of Graduate School. The four and five items are preserved in Graduate School.

2. Course terms: Spring, Autumn , and Spring-Autumn term.

3. The teaching languages for courses: Chinese, English or Chinese-English.

4. Applicable range of discipline: public, first-class discipline, second-class discipline, and third-class discipline.

5. Practice includes: experiment, investigation, research report, etc.

6. Teaching methods: lecture, seminar, practice, etc.

7. Examination for degree courses must be in paper.

8. Teaching material websites are those which have already been announced.

9. Brief introduction of chief lecturer should include: personal information (date of birth, gender, degree achieved, professional title), research direction, teaching and research achievements. (within 100-500 words)

1. **Brief Introduction of Chief lecturer:**

Zhiqun LI received the Ph. D and MS degrees in Electrical and Electronic Engineering from Universite de Bordeaux I (Bordeaux, France) in 1996 and 1983. His research interests include RF and high speed IC designs for wireless communications, low noise, low power and wide-band techniques. He has published over 80 technical papers in major academic journals and conferences.

1. **Lecturer Information (include chief lecturer)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lecturer | Discipline  (major) | Office  Phone Number | Email | Postcode |
| Zhiqun LI | Circuits and Systems | 83793303-8116 | [zhiqunli@seu.edu.cn](mailto:zhiqunli@seu.edu.cn) | 210096 |