

# 重庆大学研究生《云计算及应用》课程教学大纲（中文）

一、课程名称：云计算及应用 课程编码：B14021

二、学时学分：2.0

三、适用的学位类型：学术型博士/硕士

四、先修课程：

计算机系统结构；分布式系统；服务计算；

五、使用教材及主要参考书目

1 《云计算（第三版）》电子工业出版社

2 《实战 Hadoop》电子工业出版社

六、课程教学目标与课程简介

近年来，云计算作为一种新型的计算模式正在大型数据中心得到广泛地关注。诸如 Amazon 等企业提供了按需付费的储存、计算和宽带网络等底层服务模式。这种新型的商业和技术模式使得无需昂贵的平台就可以部署新的应用和服务。对资源的按需付费可以极大地降低部署新型应用的成本，促进创新型应用的实现。

本课程主要讲述云计算的概念、关键技术趋势、云计算体系结构，以及当前云平台的部署方式、服务类型和应用。最后，讨论云计算所面临的挑战。课程形式包括讲座、讨论以及学生报告等内容。学生负责文献的阅读，完成项目报告。

七、教学内容、教学方式及学时分配：

上课次数	每次学时	教学内容	教学方式（授课、研讨、实验等）
第1次	2学时	课程综述及课程目标；	授课
第1次	2学时	数据中心体系结构	授课
第2次	4学时	仓库级机器设计	研讨
第3次	4学时	技术趋势	授课
第4次	4学时	一致性、可用性及划分	研讨
第5次	4学时	Google 文件系统	授课
第6次	4学时	数据流计算框架	授课
第7次	4学时	存储	研讨
第8次	4学时	交互式查询	授课
合计	32学时		

其中讲课课时：20 研讨课时：12 实验实践等环节课时：0

## 八、考核及成绩评定方式

考核内容：平时成绩 30%+课程报告 30%+期末项目 40%

编制人签字：

学院主管院长签字：

编制时间：2016.1.10

# **Syllabus for Cloud Computing and Its Applications**

## **Graduate Courses of Chongqing University**

1. Course Name: Cloud Computing and Its Application

Course Code: B14021

2. Credits and Hours: 2.0 Credits/32 Hours

3. Degree Level: Academic Degree (Doctor/Master)

4. Prerequisite Courses: Computer Architecture; Distribution System;

5. Textbooks and Reference Books

一、Cloud Computing (The Third Version) .Publishing House of Electronics Industry.

二、Practice on Hadoop. Publishing House of Electronics Industry.

6. Course Description

The past decade has seen a fundamental switch from shrink wrapped software to deploying software as a service in large datacenters across the globe. Google, Yahoo!, Amazon, Ebay, and Facebook are just a few

examples that illustrate this trend. Furthermore, during the last few years, providers such as Amazon have opened their datacenters to third parties, by providing low level services such as storage, computation, and bandwidth via a "pay-as-you-go" pricing model. This trend has enabled businesses to deploy new services without building and owning expensive infrastructures. The ability to "pay-as-you-go" for resources, significantly lowers the barrier of deployment of new services, and fosters the innovation.

In this course, we describe the critical technology trends that are enabling cloud computing, the architecture and the design of existing deployments, the services and the applications they offer, and the challenges that need to be addressed to help cloud computing to reach its full potential. The format of this course will be a mix of lectures, seminar-style discussions, and student presentations. Students will be responsible for paper readings, and completing a hands-on project. Readings will be selected from recent conference proceedings and journals.