



بسمه تعالی

موسسه آموزش عالی پستاد شیراز

طرح درس

مشخصات درس و مدرس

Cluster and Grid Computing		عنوان درس (انگلیسی)		کلاستر و رایانش خوشه ای		عنوان درس (فارسی)	
تاریخ تنظیم		۳		نوع درس		گروه درس	
hazrati@cse.shirazu.ac.ir		پست الکترونیکی		سید مهدی حضرتی فرد		نام و نام خانوادگی مدرس	

اهداف کلی درس

Objective: The course will provide an insight for achieving cost efficient high performance system. The course will deal with design and architecture of grid and cluster computing.

سرفصل دروس

Web Services and the Service Oriented Architecture: Service Oriented Architecture, SOAP and WSDL, Creating Web Services, Server Side.

UNIT II Lectures: 10

OGSA and WSRF: OGSA for Resource Distribution, Stateful Web Services in OGSA, WSRF, WSRF Specification

Globus Toolkit: History, version, Applications, Approaches and Benefits, Infrastructure Management, Monitoring and Discovery, Security, Data Choreography and Coordination, GT4 Architecture, GT4 Containers.

The Grid and Databases: Requirements, Storage Request Broker, Integration of Databases with the Grid, Architecture of OGSA-DAI for offering Grid Database services.

UNIT III Lectures: 11

Cluster Computing: Approaches to Parallel Computing, Definition and Architecture of a Cluster, Categories of clusters.

Cluster Middleware: Levels and Layers of Single System Image, Design objectives, Resource Management and Scheduling, Cluster programming Environment and Tools.

Networking, Protocols and I/O for clusters: Networking and Interconnection/Switching Devices, Design Issues, Design Architecture, HiPPI, ATM, Myrinet, Memory Channel

UNIT IV Lectures: 12

Setting Up and Administering a Cluster: Setup of simple cluster, setting up nodes, clusters of clusters, System monitoring, Global Clocks Sync.

Cluster Technology for High Availability: High availability clusters, high availability parallel computing, types of failures and errors, cluster architectures and configurations for high availability, Failure/Recovery clusters.

Process Scheduling: Job management System, Resource management system, policies of resource utilization, Scheduling policies.

Load Sharing and Load Balancing: Introduction, Strategies for load balancing, Modelling parameters.

منابع

Grid and Cluster Computing by C.S.R. Prabhu, PHI

ارزیابی دانشجوی

میان ترم اول	نمره---	میان ترم دوم	نمره---
فعالیت کلاسی	نمره---	پروژه درسی	نمره---
تمرینات کلاسی	نمره---	تحقیق	نمره---
سمینار کلاسی	نمره---	پایان ترم	نمره---

تجهیزات درسی

تجهیزات سخت افزاری	تجهیزات نرم افزاری
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