



UNIVERSIDADE DE SÃO PAULO  
Instituto de Ciências Matemáticas e de Computação

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Curso: Bacharelado em Sistemas de Informação

## **Programa da disciplina SSC0523 – Tópicos Especiais em Engenharia de Software**

### **Segundo semestre de 2015**

#### **Infraestrutura Nacional de Dados Espaciais (INDE) / National Spatial Data Infrastructure (N-SDI)**

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Horário de atendimento: a combinar

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Página da Disciplina: <http://disciplinas.stoa.usp.br>

Horário de atendimento: quintas-feiras das 17h às 19h (reservar horário por e-mail antes)

### **1. Motivation**

In the planning of public policies, whatever the government level (federal, state or local), the State must rely on quality data and information about its territory.

With the increased generation and use of geographical information (GI) data comes, however, the need for standardizing them, organizing them, storing them, managing them, and sharing them better.

A spatial data infrastructure (SDI) is a framework of spatial data, metadata, users and tools that are interactively connected in order to use spatial data in an efficient and flexible way.

SDIs from global to local levels rely on standardization and interoperable GI services. In the GI field, factual standards are those from the Open Geospatial Consortium (OGC).

Based on the outcome of the aforementioned studies as well as on own experiences and surveys, we forecast an increasing demand for qualified personnel in OGC topics in the near future. OGC should become a key topic of a modern education in GI Science. As GI reality is moving from monolithic to services oriented systems, students have to learn the background. Technical as well as administrative and political aspects of service oriented architectures shall become part of current curricula.

Due to its nature (size, cost, number of interactors) an SDI is usually government-related.

In Brazil, the Presidential Decree 6666 of Nov 27th, 2008 has established the legal framework for the Brazilian spatial data infrastructure enterprise..

## 2. Definition

“The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general.”

## 3. Text book

Douglas D. Nebert (Ed.). Developing Spatial Data Infrastructures: The SDI Cookbook

Additional articles and lecture notes will be provided during the course.

Links:

[http://en.wikipedia.org/wiki/Spatial\\_data\\_infrastructure](http://en.wikipedia.org/wiki/Spatial_data_infrastructure)

<http://www.gsdi.org/>

<http://www.inde.gov.br>

[http://inspire.jrc.ec.europa.eu/events/conferences/inspire\\_2010/conf\\_skd\\_workshop.cfm](http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2010/conf_skd_workshop.cfm)

## 4. Learning Objectives

Developing spatial data infrastructures (SDI) has been given high priority recently – nevertheless at the executive and political level.

The emergence of the European INSPIRE Directive is an excellent example on this trend.

The aim of the course is to give the students a rather detailed knowledge about SDI and international standardization to design and evaluate SDI implementations – and particularly their role in electronic government.

## 5. Avaliação

A avaliação será composta de três componentes:

- a) NT: Atividades de sala de aula e trabalhos práticos (20%): para tanto, a *presença nas aulas é fundamental*.
- b) NPJ: Projeto em grupo e seminário (80%): a ser realizado conforme cronograma a seguir.

Observações importantes:

- Situações:
  - Aprovado:  $MF \geq 5,0$
  - Rec:  $3,0 \leq MF < 5,0$
  - Reprovado:  $MF < 3,0$
- Qualquer tentativa de fraude ou plágio, detectada durante ou depois das avaliações implicará em *nota zero (0)* para todos os envolvidos.

## 6. Schedule

	Date	Topics	
1	06/ago	Introduction to the course	
2	20/ago	<i>Semana da Computação</i>	
3	27/ago	Introduction to GIS I	
4	3/set	Introduction to GIS I	
	10/set	<i>Não haverá aula (semana da pátria)</i>	
5	17/set	Service-oriented Architecture	
6	24/set	Volunteered Geographic Information	
7	01/oct	Data quality	
8	08/oct	Metadata	
9	15/oct	Data modelling	
10	11/out	Geospatial web services / OGC	
11	22/out	Web mapping	
12	29/out	Project development	
13	05/nov	Project development	
14	12/nov	Project development	
14	19/nov	Final presentations I	
15	26/nov	Final presentations II	
16	10/dec	Final Exam ** (REC)	