GENERAL GUIDELINES

Do's:-

- Students should be on time for every lecture.
- Students are advised to show due respect to all faculty members.
- Students should keep the Classrooms, Laboratories and Workshops clean and tidy.
- Students must maintain absolute discipline and decorum, while on campus.
- **Students should come prepared with algorithm / flowchart / program / procedure for all the experiments before attending the laboratory session.**
- Students should bring the data sheets and laboratory records completed in all respects to the laboratory.
- Students are advised to clarify their doubts in the respective courses with the faculty.
- Students have to inform their parents that they should follow up the progress of their wards by being in touch with the institution authorities at regular intervals.
- **Students are advised to be present for the mentor meetings conducted by their respective Faculty Advisors, failing which appropriate disciplinary action will be taken.**

Don'ts:-

- Students are not permitted to attend the class without the identity card, once issued.
- **Ragging is strictly prohibited because it is punishable under Karnataka Education Act. Any student involved in ragging, will be severely punished – which includes handing over the case to Police, rustication from the college etc.**
- Writing on desks and walls is strictly prohibited, failing which the students will be fined heavily. If the identity of the individual is not established the entire class / students in the block will be fined.
- **Students must not use their cell phones during class hours. If any student is found using their cell phone during class hours it will be confiscated.**
- Students are not supposed to alter the configuration of the system / any software on the systems.

VIIIth Semester (2014-2018)

Sl. No.	Course Code	Course Title	Hours / week				Credits	Course Type
			L	T	P	S		
1.	UE14CS490	Project work	0	0	20	8	12	PW
2.	UE14CS451	Android Application Development (Applicable to Lateral Entry Students)	2	0	0	0	2	EC
	Elective-VII							
3.	UE14CS452	Introduction to Software Testing	3	0	0	0	3	EC
4.	UE14CS453	Introduction to Business	3	0	0	0	3	EC
5.	UE14CS454	Advanced Machine Learning	3	0	0	0	3	EC
		Total	**3/5**	**0**	**20**	**08**	**15/17**	

Computer Science And Engineering
(Jan-May '18)

UE14CS452: Introduction to Software Testing(3-0-0-0-3)

# of Hours: 39

Class#	Chapter Title / Reference Literature	Topics to be Covered	% of Portion Covered	
			% of syllabus	Cumulative %
1	**Unit 1 : Introduction to Software Quality and Testing & White-box Testing** T1:2.2 - 2.5, T1: 3.1 - 3.3, Other materials	Introduction to Software Quality and its importance: SDLC Process and testing, SQA processes, ETVX Model	15%	15%
2		Software Quality Measurements. Verification vs. Validation		
3		Test Life Cycle. Classification of testing types based on method / Requirement / target / needs		
4		White-box testing: Definition. Advantages and disadvantages.		
5		Static Testing – Manual, tool based.		
6		Structural testing – Unit Testing, Code coverage Testing, Code complexity testing		
7	**Unit 2 : Black Box and Integration Testing** T1: 4.1 – 4.3, T1: 4.4.1 - 4.4.3, 4.4.5, T1: 4.4.4, T1:5.1, 5.2, 5.2.1, 5.2.2, 5.2.4, 5.4 Other materials	Black-box testing: Definition. Advantages and disadvantages.	23%	38%
8		Test Case Design techniques for Black Box Testing: Specification based test design, Requirements Traceability Matrix		
9		Positive and negative testing, Boundary Value Analysis.		
10		Equivalence Partitioning		
11		Decision Tables		
12		Tools for Test Case Design (All Pairs Testing)		
13		Integration Testing : Overview, top-down integration, bottom-up integration		
14		System Integration, Scenario Testing		
15		JUnit Tool: Hands-on exercise, Test Case Design exercise.		
16	**Unit 3 : System/ Acceptance/ Adhoc and Regression Testing** T1: 6.1, 6.2, 6.3, 6.4, 6.4.1, 6.4.2, 6.4.3, 6.6, 6.6.1, 6.6.2, 6.6.3, 6.4.4 T1: 10.1 - 10.5, 10.7, 5.5 T1: 8.1, 8.2, 8.3, 8.4, 8.4.1, Other materials	System Testing Definition, reason and overview. Functional System testing and types- Design verification	23%	61%
17		Business vertical, Deployment testing		
18		Smoke/ Sanity Testing		
19		Acceptance Testing Overview, Types: User Acceptance Testing		
20		Alpha and Beta Testing		
21		Adhoc testing: Overview, Buddy / pair testing, exploratory testing		
22		Iterative testing		
23		Defect seeding, defect bash		
24		Regression Testing: Definition, Types of regression testing, When and how to do regression testing.		
25	**Unit 4 : Test Management, Testing Metrics and Non Functional Testing** T1: 15.3, 15.3.2, 17.1 - 17.6 T1: 6.3, 6.5, 6.5.1, 6.5.2 T1: 6.5, 6.5.4, 6.5.5, 6.5.6 T1: 7.1, 7.2, 7.3, 7.3.1, 7.4 T1: 12.1, 12.7 Other materials	Test management, Test Infrastructure management	15%	76%
26		Test reporting: Metrics overview, types of metrics – project, progress, productivity metrics		
27		Non Functional Testing: Overview, Scalability, Reliability		
28		Stress testing, Performance Testing Overview		
29		methodology for performance testing		
30		Usability, Accessibility		
31	**Unit 5 : Automated Testing/ Testing Infrastructure/ Summary** T1: 16.1, 16.2, 16.5 (only) Other materials	Overview, scope of automation	24%	100%
32		Design and architecture of test automation framework		
33		selecting testing tool,		
34		Functional Testing Automation demo / hands-on (Selenium)		
35		Non-Functional Testing Automation demo / hands-on (JMeter)		
36		Defect management, Bugzilla/JIRA tool demo		
37		Advances in Testing: Virtualization of Test Environments		
38		Cloud based testing		
39		Model Based Testing		

Literature:-

Book Type	Code	Author & Title	Publisher
Textbook	T1	Software Testing – Principles and Practices, Srinivasan Desikan and Gopalswamy Ramesh	Pearson
Reference	T2	Foundations of Software Testing, Aditya Mathur	Pearson
Reference	T3	Software Testing, A Craftsman's Approach, Paul C. Jorgensen.	Auerbach

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UE14CS453: Introduction to Business (3-0-0-0-3)

# of Hours: 39

Class #	Chapter Title/ Reference Literature	Topics to be covered	% of Portions Covered	
			% of syllabus	Cumulative %
1	**Unit 1**	**Course Introduction**, Historical context of how businesses evolved into their present forms. Forms of ownership (proprietorship, partnerships, and corporations)	23%	23%
2&3		Class Activity 1: How easy/difficult to start a business. Ease of Doing business, Central, State and Local governments and regulations and how to follow them.		
4	**Unit 2**	**Start-Ups:** Evolution of startups, Important factors in startups: Idea, Team, Business Model, Funding Options, Timing. Startup Culture, Startup ecosystems, Startup environment in India, Case Studies of successes and failures	19.5%	42.5%
5 & 6.5		Guest Lecture on a startup case study		
		Class Activity 2: Startup. Identify a need, build a product/solution, form a team, choose a form of company, Market research, identify funding,		
6.5 & 7	**Unit 3**	**Business Functions:** Typical functions of any business organization: Production	19.5%	62%
		Finance, **Accounting**: How the activities of a business are reported - Balance Sheets and Profit/Loss accounts.		
8		**Human Resource Management**		
		Research and Development		
9	**Unit 4**	**Sales**	23%	85%
10 & 11		**Marketing:** The activities, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. Marketing is used to create the customer, to keep the customer and to satisfy the customer. How to tailor a product or service to a target market.		
12	**Unit 5**	**Class Activity 3:** Identify the business functions for the startup idea of class activity 2.		
13		**Management:** Setting the strategy of an organization and coordinating the efforts of its employees or volunteers to accomplish its objectives through the application of available resources, such as financial, natural, technological, and human resources.	15%	100%

Literature:

Book Type	Code	Title and Author	Publication information		
			Edition	Publisher	Year
Text Book	T1	Introduction to Business	Student Edition	McGraw Hill	
Reference	R1	The single biggest reason why startups succeed, Bill Gross (TED Talk)			
Reference Book	R2	Entrepreneurship Simplified (From Idea to IPO) by Ashok Soota and SR Gopalan		Penguin Random House India	2016

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UE14CS454: Advanced Machine Learning (3-0-0-0-3)

# of Hours: 39

Class #	Chapter Title / Reference Literature	Topics to be Covered	% of Portion Covered	
			% of Syllabus	Cumulative %
1	**Unit 1 : Introduction & Basics** T1: Chapter 9	Brief overview of Deep Learning Frameworks.	19	19
2		Tensor-flow: Installation, creating and managing graphs		
3		Lifecycle of a node value, Linear regression		
4		Gradient descent, visualizing graphs using Tensorboard		
5		Simple Neural Networks, fine-tuning hyperparameters.		
6	**Unit 2 : Keras and RNNs** T3 and T1:Chapter 14	Keras: Installation, loading data, defining and compiling models	27	46
7		Fitting and evaluating models.		
8		Simple examples		
9		RNN: Introduction		
10		Recurrent Neurons, Memory cells		
11		Static and dynamic unrolling through time		
12		Variable-length input-output sequences		
13	**Unit 3 : RNNs** T1: Chapter 14	Training RNNs	19	65
14		Sequence classifier, predicting time series		
15		Deep RNNs, LSTM cell and GRU cell		
16		Text classification with RNN		
17		RNN vs Naïve Bayes'		
18	**Unit 4 : CNN** T1: Chapter 13	CNN – Architecture	19	84
19		Filters, feature maps, Max-pool layers		
20		Other pooling types		
21		Case-study : Image recognition using CNN – hands-on implementation using Keras		
22		Case-study : Image recognition using CNN – hands-on implementation using Keras		
23	**Unit 5 : Generative Adversarial Networks** T3	GAN – Architecture and training methods	16	100
24		Image generation		
25		Hands-on with Keras		
26		Hands-on with Keras		

Literature:

Book Type	Code	Author & Title	*Publication info*		
			Edition	Publisher	Year
Reference Books	T1	**Hands-on Machine Learning with Scikit-Learn and Tensorflow –** Aurelien Geron	First Edition	O'REILLY	2017
	T2	**Appropriate handouts for Keras and GAN (wherever necessary)**			