Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CIRCULAR

21.10.2017

The School of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **Network Security Analysis** for the benefit of II, III and IV year students. This course is scheduled from 28.10.2017 for 28hours which includes theory and practical. The timings are 2:00 PM to 4:00 PM from Tuesday (AN) and Friday (AN).

All Registered Students must attend all the classes without fail. The following faculty members are assigned to handle the course. S.NO	**Name of the Faculty**	**Designation**
1	D.Jeya Priya	Assistant Professor
2	C.Geetha	Assistant Professor

Head of Department

HEAD OF DEPARTMENT
Department of Computer Sci & Engg.,
Bharath Institute of Higher Education & Research
(Declared as Deemed to be University U/S 3 of UGC Act, 1956)
Chennai-600 073. INDIA

To

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Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CERTIFICATE COURSE ON NETWORK SECURITY ANALYSIS

Date of Introduction of the Course: 28.10.2017

The timings are 2.00 PM to 4: PM from Tuesday (AN) and Friday (AN).

Time Table & Lesson plan

CLASS	DATE	TOPIC
1,2	28-10-2017(AN)	**1. Security in Computing Environment** Need for Security, Security Attack, Security Services, Information Security, Methods of Protection.
3,4	30-10-2017 (AN)	**2. Basics of Cryptography**: Terminologies used in Cryptography, Substitution Techniques, Transposition Techniques. Instantaneous provisioning of computing resources, tapping into an infinite storage capacity, Cost-effective pay-as-you-use billing models
5,6	31-10-2017(AN)	**3. Encryption and Decryption**: Characteristics of Good Encryption Technique, Properties of Trustworthy Encryption Systems, Types of Encryption Systems, Confusion and Diffusion, Cryptanalysis.
7,8	01-11-2017 (AN)	**4. Exploiting Software as a Service (SaaS)** Characterizing SaaS-Streamlining administration with centralized installation, Optimizing cost and performance with scale on deman **Symmetric Key Encryption**: Data Encryption Standard (DES) Algorithm, Double and Triple DES, Security of the DES, Advanced Encryption Standard (AES) Algorithm,

		Algorithm, DES and AES Comparison.
9,10	**02-11-2017 (AN)**	**5. Public Key Encryption**: Characteristics of Public Key System, RSA Technique, Key Exchange, Diffie-Hellman Scheme, Cryptographic Hash Functions, Digital Signature, Certificates, Certificate Authorities.
11,12	**03-11-2017 (AN)**	**6. Protection of Computing Resources**: Secure Programs, Non-malicious Program Errors, Viruses and Other Malicious Code, Targeted Malicious Code, Methods of Control.
13,14	**04-11-2017 (AN)**	**7 Protection of Computing Resources**: Secure Programs, Non-malicious Program Errors, Viruses and Other Malicious Code, Targeted Malicious Code, Methods of Control
15,16	**06-11-2017 (AN)**	**8. Designing Trusted Operating Systems**: Types of Security Policies, Models of Security, Design of OS.
17,18	**07-11-2017 (AN)**	**9. Network Security**: Network Concepts, Threats in Networks, Network Security Controls.
19,20	**08-11-2017 (AN)**	**10. . IP Security**: Overview of IP Security (IPSec), IP Security Architecture, Modes of Operation, Security Associations (SA), Authentication Header (AH), Encapsulating Security Payload (ESP), Internet Key Exchange.
21,22	**09-11-2017 (AN)**	**11. Web Security**: Web Security Requirements, Secure Socket Layer (SSL), Transport Layer Security (TLS), Secure Electronic Transaction (SET).
23,24	**10-11-2017 (AN)**	**12. . Electronic Mail Security**: Threats to E-Mail, Requirements and Solutions,

		Encryption for Secure E-Mail, Secure E-Mail System.
25,26	**11-11-2017 (AN)**	**13. Firewalls**: Firewalls – Types, Comparison of Firewall Types, Firewall Configurations.
27,28	**13-11-2017 (AN)**	**14. Planning and Enforcing Security Policies**: Planning Security Policies, Risk Analysis, Security Policies for an Organization, External Security.

COURSE COORDINATOR

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CERTIFICATE COURSE ON NETWORK SECURITY ANALYSIS

Date of Introduction of the Course: 28.10.2017

COURSE SYLLABUS

1.Security in Computing Environment

Need for Security, Security Attack, Security Services, Information Security, Methods of Protection.

2. Basics of Cryptography:

Terminologies used in Cryptography, Substitution Techniques, Transposition Techniques.

Instantaneous provisioning of computing resources, tapping into an infinite storage capacity, Cost-effective pay-as-you-use billing models

3. Encryption and Decryption:

Characteristics of Good Encryption Technique, Properties of Trustworthy Encryption Systems, Types of Encryption Systems, Confusion and Diffusion, Cryptanalysis.

ARTMENT

4. Symmetric Key Encryption:

Data Encryption Standard (DES) Algorithm, Double and Triple DES, Security of the DES, Advanced Encryption Standard (AES) Algorithm, DES and AES Comparison.

5.Public Key Encryption:

Characteristics of Public Key System, RSA Technique, Key Exchange, Diffie-Hellman Scheme, Cryptographic Hash Functions, Digital Signature, Certificates, Certificate Authorities.

6. Protection of Computing Resources:

Secure Programs, Non-malicious Program Errors, Viruses and Other Malicious Code, Targeted Malicious Code, Methods of Control.

7. Protection of Computing Resources:

Secure Programs, Non-malicious Program Errors, Viruses and Other Malicious Code, Targeted Malicious Code, Methods of Control.

8. Designing Trusted Operating Systems:

Types of Security Policies, Models of Security, Design of OS.

9. Network Security:

Network Concepts, Threats in Networks, Network Security Controls.

10. IP Security:

Overview of IP Security (IPSec), IP Security Architecture, Modes of Operation, Security Associations (SA), Authentication Header (AH), Encapsulating Security Payload (ESP), Internet Key Exchange.

11. Web Security:

Web Security Requirements, Secure Socket Layer (SSL), Transport Layer Security (TLS), Secure Electronic Transaction (SET).

12. Electronic Mail Security: Threats to E-Mail, Requirements and Solutions, Encryption for Secure E-Mail, Secure E-Mail System.

13. Firewalls:

Firewalls – Types, Comparison of Firewall Types, Firewall Configurations.

14. Planning and Enforcing Security Policies:

Planning Security Policies, Risk Analysis, Security Policies for an Organization, External Security.

COURSE OBJECTIVES

In this course we plan to give students an overview of the field of Network Security, and an in-depth study into its enabling technologies and main building blocks. Students will gain hands-on experience solving relevant problems through projects that will utilize existing public cloud tools. It is our objective that students will develop the skills needed to become a practitioner or carry out research projects in this domain.

Specifically, the course has the following objectives:

Students will learn

1) The fundamental ideas behind Cloud Network security, the evolution of the paradigm, its applicability; Benefits, as well as current and future challenges;

2) The basic ideas and principles in data centre design; Network security techniques and cloud

Software deployment considerations;

3) Different CPU, memory and I/O virtualization techniques that serve in offering software, computation and storage services on the cloud; Software Defined Networks (SDN) and Software Defined Storage (SDS);

4) The variety of programming models and develop working experience in several of them.

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CERTIFICATE COURSE ON NETWORK SECURITY ANALYSIS
Date of Introduction of the Course: 28.10.2017

School of Computing		
Registered Students Name List		
S.NO	**REG.NO**	**NAME OF THE STUDENT**
1	U14CS111	NAGINENI SRIKANTH CHOWDARY
2	U14CS112	NAGIREDDY MOHAN KRISHNA REDDY
3	U14CS113	NALLAJARLA CHAKRADHAR
4	U14CS114	NANDALA SWETHA
5	U14CS115	NANDIPALLI MOUNICA
6	U14CS116	NAYANA.P. BALA CHANDRAN
7	U14CS117	NEERAJAN SAHA
8	U14CS129	PIYALI CHAKRABORTHY.M
9	U14CS130	POOJA KUMARI
10	U14CS131	PRAGYA ADITI
11	U14CS132	PRASHANTH.B
12	U14CS133	PRATEEP ANAND
13	U14CS134	PRINCE RAJ
14	U14CS143	RAJNISH RANJAN PANDEY
15	U14CS144	RAKESH KUMAR
16	U14CS145	RAKHI PRASAD
17	U14CS146	RAM KUMAR PANDEY
18	U14CS147	RAMANATHAN.J
19	U15CS192	SESHA SRUJAN.B
20	U15CS193	SHAIK AFRIDI
21	U15CS196	SHARYARAI.S
22	U15CS200	SITAROJ SRIKANTH
23	U15CS203	SUBASH CHANDRAN.V
24	U15CS204	SUBHAM RAY
25	U15CS205	SUDALAGUNTA GOPI

26	U15CS206	SUJEET KRISHNA KUMAR K
27	U15CS211	THARUN PRANAV K.S.
28	U15CS212	UTTAM KUMAR
29	U15CS213	VADLAMUDI HARISH KUMAR
30	U15CS217	VERISETTY SUBBARAO
31	U15CS218	VETCHA VENKATA KRISHNA TEJA
32	U15CS225	VINOTHKUMAR.J
33	U15CS226	VUNDAVELLI VEERA VENKATA SATYANARAYANA
34	U15CS233	KARAN PRINCY.P
35	U15CS246	J.SAI RAM MADHAV
36	U15CS247	CHIMALAMUDI VINEEL
37	U15CS250	MUTHULAKSHMI.M
38	U16CS177	VAKA MAHENDRA REDDY
39	U16CS178	TIPPAREDDY NARENDRA REDDY
40	U16CS179	EDA MADANAMOHAN REDDY
41	U16CS180	THATI RAGHAVA
42	U16CS183	ARAVINDASAMY R
43	U16CS184	AJAY KUMAR S
44	U16CS185	MD TAJUDDIN HAWARI
45	U16CS186	PERUGU KALYAN CHAKRAVARTHI
46	U16CS193	MUNAGANURU SAI ANUDEEP
47	U16CS194	GADDAM AMARA HARSHAVARDHAN REDDY
48	U16CS195	BOLLAM MANINDRA
49	U16CS201	BATTULA KALYAN
50	U16CS202	SHAIK MOHAMMAD WASEEM
51	U16CS203	GANAMANTHU SUBBARAYUDU
52	U16CS204	GADDALA UDAY KIRAN
53	U16CS206	PATHAN SALMANKHAN
54	U16CS207	YENUGU KASI GOVARDHAN REDDY
55	U16CS208	MANIKANTAN
56	U16CS209	DIPANJAN DAS
57	U16CS210	TANIRU SATISH
58	U16CS701	PRADEEP SURIYA
59	U16CS702	MOHANRAJ
60	U16CS703	HARVINDER SINGH

61	U16CS707	HANUMANTHU RAO
62	U16CS708	SIMRAN ALIZA NISAR

COURSE COORDINATOR

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CERTIFICATE OF PARTICIPATION

This certificate is presented to

PRINCE RAJ

For actively participating in the value added course **"Network Security Analysis"** Conducted by School of Computing, BIHER from 28.10.2017 to 13.11.2017.

COURSE COORDINATORS

HEAD OF THE DEPARTMENT

DIRECTOR

COURSE FEEDBACK FORM

Academic Year		2017 - 2018					
Term		ODDSEM					
Course Number							
Course Title		NETWORK SECURITY ANALYSIS					
Number of Credits							
Type of Course	Regular		Elective		Add-on	✓	

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80	✓	80-100	

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6	✓	6-8		8-10	

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	YES
(ii)	Has adequate prior exposure to the prerequisites	YES
(iii)	Had to pickup relevant additional topics through concurrent study	YES
(iv)	Have no exposure to the background material	YES

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	YES
(b)	Get exposed to a relevant subject	YES
(c)	Curiosity	YES
(d)	Better Employment Opportunity	YES
(e)	Complete Course requirements	YES
(f)	To Improve CGPA	YES

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture		✓			
2.	Comment of the Subject			✓		
3.	Clarity of expression		✓			
4.	Level of preparation		✓			
5.	Level of interaction			✓		
6.	Accessibility outside the class		✓			
7.	Others (please specify		✓			

A: Excellent		B: Very Good		C: Good		D: Satisfactory		E: Poor	

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