MINUTES OF THE SIXTH BOARD OF STUDIES MEETING

Faculty: Computer Science   **Board: Computer Science with Data Analytics**

The Meeting of Board of Studies (BoS) was held as given below:

Name of the Body	Board of Studies
Department	Computer Science with Data Analytics
Meeting No.	6th
Date and Time	29.07.2022@10.00 a.m
Venue	Hall No. 218
Members Attended	The details are given in the ANNEXURE –I

	AGENDA
1	Discussion on UG Curriculum for AY 2022-23 and onwards adopting R4 guidelines
2	Discussion on syllabi for Part III – Core Courses for first semester UG - 2022-23 Batch
3	Discussion on syllabi for Part III Inter disciplinary Course (IDC) offered by other departments
4	Discussion on Part I (Tamil/Hindi/French/Malayalam) offered by Language department for 2022-23 batch
5	Discussion on Part II (English) offered by English department for 2022-23 Batch
6	Discussion on Part IV (AECC) Environmental Studies for 2022-23 Batch
7	Discussion on credits for Part-V Extension Activity for the Batch 2022-23 Batch
8	Discussion on PG Curriculum for AY 2022-23 and onwards adopting R4 guidelines
9	Discussion on syllabi for first semester courses PG 2022-23 Batch
10	Discussion on Value Added Certificate Courses (VACC)
11	Any other matters

290

	Dr. N.G.P. ARTS AND SCIENCE COLLEGE	BoS
	(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) (Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA) Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India Web : www.drngpasc.ac.in	Email : info@drngpasc.ac.in	Phone : +91-422-2369100	6th

MINUTES OF THE SIXTH BOARD OF STUDIES MEETING

Faculty: Computer Science   **Board: Computer Science with Data Analytics**

The Chairman of BoS welcomed all the Panel members for the meeting. The items listed in the agenda were taken for discussion.

The following are the minutes of the meeting:

Item – 01	Discussion on curriculum for the UG 2022-23 to 2024-25 Batch adopting R4 guidelines
Discussion	Under regulation R4, common syllabi have been designed for the mandatory core theory courses recommended by TANSCHE (for all UG programmes related to computer science). The unified syllabus framed by designated departments will be approved by their respective BoS. The UG Curriculum for AY 2022-23 was presented for discussion.
Resolution	The Board unanimously approved the curriculum.
Item – 02	Discussion on syllabi for Part III – Core Courses for first semester UG - 2022-23 Batch
Discussion	**224AI1A1CA:Problem Solving and Programming in C** • The unified syllabus approved in the Artificial Intelligence and Machine Learning Board of Studies was placed for endorsement **224IT1A1CA: Digital Computer Fundamentals (New Course)** • The unified syllabus approved in the Information Technology Board of Studies was placed for endorsement. **224DA1A1CP: Programming in C** • Dr. Satheesh Kumar suggested to include programs in pattern creation and recursion in order to reinforce the iteration techniques
Resolution	The Board unanimously approved the syllabus
Item-03	Discussion on syllabi for Part III Inter disciplinary Course (IDC) offered by other departments
Discussion	**222MT1A1IF - Mathematics for Computing I** • Syllabus approved by the Mathematics BoS was placed for endorsement
Resolution	The Board approved the same

291

	Dr. N.G.P. ARTS AND SCIENCE COLLEGE	BoS
	(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) (Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA) Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100	6th

Item - 04	**Discussion on Part I (Tamil/Hindi/French/Malayalam) offered by Language department for 2022-23 batch**
Discussion	**221TL1A1TA - Part I:Tamil-I: Ikkala Illakiyam/ 221TL1A1HA - Hindi-I: Modern Literature /221TL1A1FA - French-I: Grammar, Translation and Civilization / 221TL1A1MA - Malayalam – I : Modern Literature respectively** • The unified syllabus approved by the Board of Studies in Languages was placed for endorsement.
Resolution	The Board approved the same
Item -05	**Discussion on Part II (English) offered by English department for 2022-23 Batch**
Discussion	**221EL1A1EA : Part II: Professional English I** • The unified syllabus approved by the Board of Studies in English was placed for endorsement.
Resolution	The Board unanimously approved the syllabus
Item - 06	**Discussion on Part IV (AECC) Environmental Studies for 2022-23 Batch**
Discussion	**223MB1A1AA: Environmental Studies** • The unified syllabus approved by the Board of Studies in Microbiology was placed for endorsement.
Resolution	The Board approved the syllabus
Item - 07	**Discussion on credits for Part-V Extension Activity for the Batch 2022-23 Batch**
Discussion	• One credit to be awarded for participation in YRC/RCC//NSS/ RRC/Yoga/Sports/Clubs
Resolution	The Board members approved one credit for extension activity
Item - 08	**Discussion on PG Curriculum for AY 2022-23 and onwards adopting R4 guidelines**

292

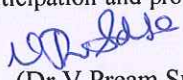| Dr. N.G.P. ARTS AND SCIENCE COLLEGE	BoS
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) (Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA) Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India Web : www.drngpasc.ac.in	Email : info@drngpasc.ac.in	Phone : +91-422-2369100	6th

Discussion	Under regulation R4, common syllabi have been designed for the mandatory core theory courses recommended by TANSCHE (for all PG programmes related to computer science). The unified syllabus framed by designated departments will be approved by their respective BoS. • The PG Curriculum for AY 2022-23 was presented for discussion.
Resolution	The Board unanimously approved the curriculum.
Item – 09	**Discussion on syllabi for first semester courses PG 2022-23 Batch**
Discussion	**224DA2A1CC: Design and Analysis of Algorithms (New Course)** **224DA2A1DA: DSE – I : Digital Image Processing (New Course)** **224DA2A1DB: DSE – I : Information Retrieval (New Course)** **224DA2A1CA: Principles of Data Science and Python** • Dr. Bharathidason suggested to include big data ecosystem, facets of data in Unit I, Applications of data science, case study in Unit II and seaborn package in Unit V. **224CS2A1CB: Advanced Java and 224CS2A1CQ: Advanced Java Lab** • The unified syllabus approved in the Computer Science Board of Studies was placed for endorsement. **224DA2A1DC / Web Intelligence** • Ms. Jennifer suggested to include semantic web since it is necessary for analytics for complex domains
Resolution	After due deliberations, the board resolved to approve the syllabus
Item -10	**Discussion on Value Added Course (VACC)**
Discussion	The course titled "Visual Analytics using Tableau" to be offered by internal faculty for 2021-22 batch was discussed
Resolution	The Board approved the same
Item -11	**Any other matters**
Discussion	• The board members discussed and recommended the Panel of Examiners
Resolution	The Board approved the same

The Chairman of Board of Studies (BoS) thanked all the members for their active participation and providing their valuable suggestions.

Date: 29.07.2022

(Dr.V.Pream Sudha)

BoS Chairman/HoD
Department of Computer Science with Data Analytics
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

Dr. NGPASC
COIMBATORE|INDIA

Page |4

293

Syllabus Revision

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 224AI1A1CA/Problem Solving and Programming in C

Unit	Existing	Changes
I	Problem Solving and Introduction to C :Introduction to Problem Solving - Program development - Analyzing and Defining the Problem - Algorithm - Flow Chart - Introduction to C Programming – Character Set – Tokens - Operators and Expressions – Formatted Input and Output Functions	Introduction: Types of Programming Languages – High level Languages – Assembly Languages – Machine Level Languages – System Software – Operating Systems – Compiler – Linker and Interpreter. Pseudo Codes – Structured Programming - Sequence – Selection – Repetition – Modular Programming.
II	Control Structures and Arrays: Introduction: Control Statements – If and Switch statements - While Statement - Do While Statement – Switch - For Loop – Nested Loop - Break - Continue – Go to Statement Defining Array – One dimensional – Two dimensional – Multi dimensional array	Operator Precedence and Associativity -Storage classes-Simple programs for logic building.
III	Strings and Functions :Defining a string – Initialization of Strings – Reading and Writing Strings – String Functions - Defining a function – Accessing a function – Function prototypes – Passing arguments to a function – Passing arrays to functions – Recursion – Storage classes	Pre-processor Directives: Macro substitution – File inclusion – Compiler control directives. Dynamic Arrays.
IV	Pointers and Structures : Features of Pointers – Pointer Declaration – Arithmetic Operation with Pointers – Pointers and arrays – Pointers and Two-Dimensional arrays – Array of Pointers - Structures and Unions: Defining a Structure – Processing a Structure – Array of Structures - Structure within Structure – Pointers to Structures – Enumerated Data Type – Union	.
V	Files :Introduction: Stream and File Types – Steps for File operations – File Input/Output – Error Handling in Input/Output Operation - Structures Read and Write – Other File Function-– Command Line Arguments – Dynamic Memory Allocation – malloc( ) - calloc( ) – free( ) – realloc( )	

PERCENTAGE OF SYLLABUS REVISED: 30%

COURSE FOCUS ON:

✓	Skill Development	☐	Entrepreneurial Development
✓	Employability	☐	Innovation
☐	Intellectual property right		

294

Syllabus Revision

Faculty : Computer Science

Board : Computer Science with Data Analytics

Semester: I

Course Code / Name: 224DA1A1CP/ Programming in C

Prg. No	Existing	Changes
1	Simple programs to understand the concepts of data types	
2	Programs to get familiarity on using conditional statements	
3	Programs to perform control and repetition statements	Program to implement patterns
4	Program to Perform Matrix operations	Program to perform Dynamic Array operations
5	Program to Work with pointers	
6	Program to implement functions	
7	Program to perform Functions (call by value and call by reference)	Program to perform recursion
8	Program to create and implement String manipulations	
9	Program to test dynamic Memory Allocations	
10	Program to implement structures	
11	Program to perform union and enumerated Data types	
12	Program using File operation	

PERCENTAGE OF SYLLABUS REVISED : 25%

COURSE FOCUS ON:

[✓] Skill Development [ ] Entrepreneurial Development

[✓] Employability [ ] Innovation

[ ] Intellectual property right

Dr. NGPASC
COIMBATORE | INDIA

295

Syllabus Revision – New Course

Faculty: Computer Science   **Board: Computer Science with Data Analytics**

Course Code/ Name: 224IT1A1CA – DIGITAL COMPUTER FUNDAMENTALS
Semester: I

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUS ON:

✓	Skill Development	✓	Employability
☐	Intellectual Property Right	☐	Entrepreneurial Development
☐	Innovation		

296

Syllabus Revision – New Course

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 222MT1A1IF/ MATHEMATICS FOR COMPUTING I (IDC)
Semester: I

PERCENTAGE OF SYLLABUS REVISED: 100 %

COURSE FOCUS ON:

✓	Skill Development	☐	Employability
☐	Intellectual Property Right	☐	Entrepreneurial Development
☐	Innovation		

297

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)
Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India
Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100

BoS

6th

Syllabus Revision

Faculty: Computer Science

Board: Computer Science with Data Analytics

Semester: I

Course Code/ Name: 221TL1A1TA / PART – I - TAMIL - I: IKKALA ILAKKIYAM

Unit	Existing	Changes
I	1. உயிர் பெற்ற தமிழர் பாட்டு - பாரதியார் 2. படி - பாரதிதாசன் 3. போராட்டப் புறப்பட்டோம் - தமிழ் ஒளி 4. தமிழ் கொலை புரியாதீர் - புலவர் குழந்தை 5. திரைத்தமிழ்: அ)சும்மா கிடந்த நிலத்தை - எனத் தொடங்கும் பாடல் - பட்டுக்கோட்டை கல்யாண சுந்தரனார். ஆ) சமரசம் உலாவும் இடமுமே - எனத் தொடங்கும் பாடல் - மருதுகாசி. இ) உன்னை அறிந்தால் - எனத் தொடங்கும் பாடல் – கண்ணதாசன்.	இலக்கிய வரலாறு - மறுமலர்ச்சி கவிஞர்களின் தமிழ்ப்பணிகள் பாரததேசம் - பாரதியார் தமிழரின் பெருமை - நாமக்கல் கவிஞர் திரைத் தமிழ் : விந்நூரானத்த வளர்க்கப் போறாண்டி – உடுமலை நாராயணகவி
II	1. கடமையைச் செய் - மீரா 2. அம்மாவின் பொய்கள் - ஞானக்கூத்தன் 3. செருப்புடன் ஒரு பேட்டி - மு.மேத்தா 4. சிங்கவால் குரங்கின் மரணம் - சிற்பி 5. கடல்கோள் 2004 - முத்தமிழ் விரும்பி 6. கரிக்கிறது தாய்ப்பால் - ஆரூர் தமிழ்நாடன் 7.ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் 8. ஹைக்கூ கவிதைகள் - 15 கவிதைகள்	இலக்கிய வரலாறு - புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான் கன்னிமாடம் - மு.மேத்தா மலையாளக் காற்று - சிற்பி
III	1. ஒரு கதவும் கொஞ்சம் கண்ணீர்பாரும் - தாமரை 2. நீரில் அலையும் முகம் - அ. வெண்ணிலா 3. தொட்டிச் செடி - இளம்பிறை 4. எனிந்த வித்தியாசங்கள் - மல்லிகா	தொலைந்து போனேன் - தாமரை தற்காத்தல் - பொன்மணி வைரமுத்து புதையுண்ட வாழ்க்கை - சுகந்தி சுப்ரமணியன்
IV	1. வேப்பமரம் - நா.பிச்சமூர்த்தி 2. அக்கரை - புதுமைப்பித்தன் 3. ஒருபிடி சோறு - ஜெயகாந்தன் 4. காய்ச்சமரம் - கி.ராஜநாராயணன் 5. நிசாசை - தாகா 6. குதிரை மசால் தாத்தா - சு.வேணுகோபால்	இலக்கிய வரலாறு - சிறுகதையின் தோற்றமும் வளர்ச்சியும் கனகாம்பரம் - கு.ப.ராஜகோபாலன் ஆற்றங்கரைப் பிள்ளையார் - புதுமைப்பித்தன் பொம்மை - ஜெயகாந்தன் காட்டில் ஒரு மான் - அம்பை வேட்கை - சூர்யகாந்தன்
V	அ. இலக்கியவரலாறு 1. மறுமலர்ச்சி கவிஞர்களின் தமிழ்ப்பணிகள் 2. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 3. சிறுகதையின் தோற்றமும் வளர்ச்சியும் ஆ.இலக்கணம்:1.வல்லினம் மிகும், மிகா இடங்கள் (ஒற்றுப்பிழை நீக்கி எழுதுதல்) 2. ர,ற,ல, ழ, எ,ண, ந,ன வேறுபாடு (ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல்) இ. படைப்பாக்கப் பயிற்சி 1. கவிதை, சிறுகதை எழுதுதல்	இலக்கிய வரலாற்றுப் பகுதி அந்தந்த அலகுகளுக்குத் தகுந்தாற் போல் மாற்றி அமைக்கப்பட்டுள்ளது.

PERCENTAGE OF SYLLABUS REVISED: 44 %

COURSE FOCUS ON:

☑ Skill Development   ☑ Entrepreneurial Development

☑ Employability   ☑ Innovation

☐ Intellectual Property Right (IPR)

298

Syllabus Revision

Faculty: Computer Science **Board:** Computer Science with Data Analytics

Semester : I

Course Code/ Name: 221TL1A1HA/ PART – I - HINDI – I : MODERN LITERATURE

Unit	Existing	Changes
I	गद्य – नूतन गद्य संग्रह (जय प्रकाश) पाठ 1- रजिया पाठ 2- मक्रील पाठ 3- बहता पानी निर्मला पाठ 4- राष्ट्रपिता महात्मा गाँधी	-
II	कहानी कुंज- डॉ वी.पी. 'अमिताभ'(पाठ 1-4)	-
III	व्याकरण : शब्द विचार (संज्ञा, सर्वनाम,कारक,विशेषण)	व्याकरण : शब्द विचार (संज्ञा, सर्वनाम,विशेषण)
IV	अनुच्छेद लेखन	-
V	अनुवाद अभ्यास-III (केवल अंग्रेजी से हिन्दी में) (पाठ 1 to 10)	-

PERCENTAGE OF SYLLABUS REVISED: 25 %

COURSE FOCUS ON:

- ☑ Skill Development
- ☑ Employability
- ☐ Intellectual Property Right (IPR)
- ☑ Entrepreneurial Development
- ☑ Innovation

299

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

BoS

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)
Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India
Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100

6th

Syllabus Revision

Faculty: Computer Science

Board: Computer Science with Data Analytics

Semester : I

Course Code/ Name: 221TL1A1FA / PART – I FRENCH – I: Grammar, Translation and Civilization.

Unit	Existing			Changes		
I	**Objectifs de Communication** • Saluer • Enter en contact • avec quelqu'un. • Se presenter. • S'excuser	**Tâche** En cours de cuisine, premiers contacts avec les members d'un groupe	**Activités de réception et de production orale** • Comprendre des personnes qui se saluent. • Échanger pour entrer en contact, se présenter, saluer, s'excuser. • Communiquer avec *tu* ou *vous*. • Comprendre les consignes de classe Épeler son nom et son prénom. Computer jusqu'à 10.	-		
II	**Objectifs de Communication** • Demander de se presenter. • Présenter quelqu'un.	**Tâche** Dans la classe de français, se presenter et remplir une fiche pour le professeur.	**Activités de réception et de production orale** • Comprendre les informations essentielles dans un échange en milieu professionnel. • Échanger pour se presenter et présenter quelqu'un.	-		
III	**Objectifs de Communication** • Exprimer ses gouts.	**Tâche** Dans un café, participer à une soirée de rencontres rapides et remplir de taches d'appréciation.	**Activités de réception et de production orale** • Dans une soirée de recontres rapid comprendre des personnes qui échangent sur elles et sur leurs goût • Comprendre une personne qui parler des goûts de quelqu'un d'autre.	-		
IV	**Objectifs de Communication** • Présenter quelqu'un	**Tâche** Dans un café, participer à une soirée de rencontres rapides et remplir de taches d'appréciation	**Activités de réception et de production orale** • Exprimer ses goûts. • Comprendre une demande laissée sur un répondeur téléphonique. • Parler de ses projets de week-end.	Demander à quelqu'un de faire quelque chose. Demander poliment Parler d'actions passes.	Organiser un programme d'activités pour accueillir une personne importante.	Comprendre une personne demande un service à quelqu'un. Demander à quelqu'un de faire quelque chose.Imaginer et raconter au passé à partir de situations dessinées.
	Autoévaluation du module I Page 40 – Préparation au DELF A1 page 42			Tu veux bien? Page 46		
V	~~Demander à quelqu'un de faire quelque chose.~~ ~~Demander poliment.~~ ~~Parler d'actions passes.~~	~~Organiser un programme d'activités pour accueillir une personne importante.~~	~~Comprendre une personne demande un service à quelqu'un.~~ ~~Demander à quelqu'un de faire quelque chose.~~ ~~Imaginer et raconter au passé à partir de situations dessinées.~~	Make in Own Sentences		
	~~Tu veux bien? Page 46~~					

PERCENTAGE OF SYLLABUS REVISED: 25% COURSE FOCUS ON

- [x] **Skill Development**
- [x] **Entrepreneurial Development**
- [x] **Employability**
- [x] **Innovation**
- [ ] **Intellectual Property Right (IPR)**

300

Syllabus Revision

Faculty: Computer Science

Board: Computer Science with Data Analytics

Semester : I

Course Code/ Name: 221TL1A1MA / PART – I - MALAYALAM – I : MODERN LITERATURE

Unit	Existing	Changes
I	Novel : ~~Alahayude penmakkal~~	Novel : Pathummayude Adu
II	Novel : ~~Alahayude penmakkal~~	Novel : Pathummayude Adu
III	Short Story : Nalinakanthi	-
IV	Short Story : Nalinakanthi	-
V	~~Composition & Translation~~	Expansion of ideas, General Essay and Translation

PERCENTAGE OF SYLLABUS REVISED: 50%

COURSE FOCUS ON:

☑ Skill Development   ☑ Entrepreneurial Development

☑ Employability   ☑ Innovation

☐ Intellectual Property Right (IPR)

301

Syllabus Revision

Faculty: Computer Science

Board: Computer Science with Data Analytics

Semester: I

Course Code/ Name: 221EL1A1EA- Core Course: Professional English I

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUS ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability	☐	Innovation
☐	Intellectual Property Rights (IPR)		

302

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)
Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India
Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100

BoS

6th

Syllabus Revision

Faculty: Computer Science
Semester: I

Board: Computer Science with Data Analytics

Course Code/ Name: 223MB1A1AA –Environmental studies

Unit	Existing	Changes
I	Introduction to Environmental studies& Ecosystems: Multidisciplinary nature of environmental studies; components of environment – atmosphere, hydrosphere, lithosphere and biosphere. Scope and importance; Concept of sustainability and sustainable development. E c o s y s t e m - Structure and function of ecosystem; Energy flow in an ecosystem: food chain, food web and ecological succession. ~~Case studies of the following ecosystems: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).~~	
II	Natural Resources: Renewable and Non-renewable Resources: Land Resources and land use change; Land degradation, soil erosion and desertification. Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. Water: Use and overexploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state). ~~Heating of earth and circulation of air; air mass formation and precipitation.~~ Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, ~~case studies.~~	
III	Biodiversity and Conservation: Levels of biological diversity: genetic, species and ecosystem diversity; Biogeography zones of India; Biodiversity patterns and global biodiversity hot spots. India as a mega-biodiversity nation; Endangered and endemic species of India. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. ~~Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.~~	
IV	Environmental Pollution, Environmental Policies & Practices: Environmental pollution: types, causes, effects and controls; Air, water, soil, chemical and noise pollution. Nuclear hazards and human health risks. Solid waste management: Control measures of urban and industrial waste. Pollution case studies. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environment Laws: Environment Protection Act; Prevention & Control of Pollution Act – Air & Water. Wildlife Protection Act; Forest Conservation Act; ~~International agreements; Montreal and Kyoto protocols and conservation on Biological Diversity (CBD). The Chemical Weapons Convention (CWC). Nature reserves, tribal population and rights, and human, wildlife conflicts in Indian context.~~	
V	Human Communities and the Environment& Field Work : Human population and growth: Impacts on environment, human health and welfares. ~~Carbon foot-print. Resettlement and rehabilitation of project affected persons; case studies. Disaster management: floods, earthquakes, cyclones and landslides. Environmental movements: Chipko, Silent valley, Bishnios of Rajasthan.~~ Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness.~~case studies (e.g. CNG vehicles in Delhi).~~ Visit to an area to document environmental assets; river/forest/flora/fauna, etc. ~~Visit to a local polluted site – Urban/Rural/Industrial/Agricultural. Study of common plants, insects, birds and basic principles of identification. Study of simple ecosystems-pond, river, Delhi Ridge, etc.~~	Population explosion – Family Welfare Programmes Role of Information Technology in Environment and human health. Role of the Colleges, Teachers and Students in village adoption towards clean, green and make in villages in various aspects.

PERCENTAGE OF SYLLABUS REVISED: 33 %

COURSE FOCUS ON:

- [✓] Skill Development
- [ ] Entrepreneurial Development
- [ ] Employability
- [ ] Innovation
- [ ] Intellectual Property Rights (IPR)

303

Dr. N.G.P. ARTS AND SCIENCE COLLEGE	BoS
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) (Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3ʳᵈ Cycle - 3.64 CGPA) Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100	6ᵗʰ

Syllabus Revision

Faculty : Computer Science **Board :** Computer Science with Data Analytics

Course Code / Name: 224DA2A1CA/ Principles of Data Science and Python **Semester: I**

Unit	Existing	Changes
I	Introduction: The current landscape of Data Science- Data science process – Stages in data science project Data Science Components–Working with data: Retrieving data – Data preparation – Data exploration – Data modelling – Presentation	Benefits of Data Science - Facets of Data –Big data eco-system
II	Problems when handling large data – General techniques for handling large data – Case study – Steps in big data – Distributing data storage and processing with Frameworks	Applications in Data Science – Case study : Assessing risk
III	Introduction: GroupBy Mechanics – Data Aggregation – Groupwise Operations and Transformations – Pivot Tables and Cross Tabulations – Date and Time Date - Type tools – Time Series Basics – Data Ranges - Frequencies and Shifting Combining and Merging DataSets – Reshaping and Pivoting – Data Transformation – String Manipulation, Regular Expressions	
IV	Introduction to NumPy - Understanding the N - dimensional data structure - Creating NumPy arrays - Basic operations and manipulations on N-dimensional arrays - Indexing and Slicing-Advanced Indexing – Pandas: Mathematical Functions – Statistical Functions – Search, Sorting and Counting Functions –Matrix Library	
V	Introduction: Data Acquisition by Scraping web applications –Submitting a form - Fetching web pages – CSS Selectors. Visualization: Visualization In Python: Matplotlib package – Plotting Graphs – Controlling Graph – Adding Text – More Graph Types – Getting and setting values	Plotting with Pandas and seaborn - Line plots-Bar Plots-Histogram Density and Plots - scatter or point plots-facet grids and categorical data

PERCENTAGE OF SYLLABUS REVISED: 20 %

COURSE FOCUS ON:

✓	Skill Development	☐ Entrepreneurial Development
✓	Employability	☐ Innovation
☐	Intellectual Property Right	

304

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)
Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India
Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100

| BoS |
| 6th |

Syllabus Revision

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 224DA2A1CP / Python Programming   **Semester: I**

Unit	Existing	Changes
1	Programs to test simple Python statements	Programs to perform aggregation operations
2	Program to Implement a sequential search	
3	Program to Explore string functions	
4	Program to Read and Write into a file	
5	Program to Demonstrate use of List	
6	Program to Demonstrate use of Dictionaries	
7	Program to Demonstrate use of Tuples	
8	Program to Create Comma Separate Files (CSV), Load CSV files into internal Data	
9	Program using Pandas: Extract items at given positions from a series	
10	Program using Pandas: Filter valid emails from a series	Programs to implement correlation and covariance
11	Program using Pandas: Find the outliers from a series or data frame column	Program to plot graphs using Matplotlib and seaborn packages
12	Program to Perform Analysis for given data set using Pandas	

PERCENTAGE OF SYLLABUS REVISED: 25 %

COURSE FOCUS ON:

✓ Skill Development	☐ Entrepreneurial Development
✓ Employability	☐ Innovation
☐ Intellectual Property Right	

305

	Dr. N.G.P. ARTS AND SCIENCE COLLEGE	BoS
	(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) (Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA) Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India Web : www.drngpasc.ac.in | Email : info@drngpasc.ac.in | Phone : +91-422-2369100	6th

Syllabus Revision

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 224CS2A1CB / Advanced Java   **Semester: I**

Unit	Existing	Changes
I	Introduction: Advantages – Design patterns for Properties – Events – Methods and Design Patterns - Java Beans API – Swing : Introduction – Swing Is Built on the AWT - Two Key features of Swing – MVC Connections – Components and Containers – The Swing Packages – Simple Swing Applications - Exploring Swing	
II	Introduction:– Applet Basics – Types of Applet - Applet Architecture – An Applet Skeleton – Simple Applet Display Methods – Requesting and Painting – Using the status window – The HTML Applet tag – Passing parameters to applet – getDocumentBase() and getcodeBase() – Applet context and showDocument()	
III	Introduction :Background - The life cycle of a Servlet – Using Tomcat for Servlet development – A Simple Servlet – The Javax.Servlet Packages – Reading Servlet Parameters – The javax.servlet.http packages – Handling Http request and responses – cookies - Session Tracking – Applying applets and Servlets	Java Server Pages- Tags - Request String - User Session - Cookies- Session objects. Java Remote Method Invocation: - RMI Process
IV	Introduction: EJB Architecture and Design – EJB component Model – Roles ,Relationships and Responsibilities – Enterprise Java Bean – Understanding EJB Container Functionality – Integrating with CORBA – Session Bean :Writing a Session in EJB – Implementing the session Synchronization interface - Choosing the stateless and Stateful Beans	
V	Introduction : JDBC Driver types – Creating the First JDBC Programs – Perform Batch Updates – Using Save Points – Configuring the JDBC-ODBC Bridge – Explaining the Database connection Pools and Data Sources – Revisiting the DB Processor – Using the Rowset Interface – Understanding the J2EE connector Architecture	

PERCENTAGE OF SYLLABUS REVISED: 30 %

COURSE FOCUS ON:

✓	Skill Development	☐	Entrepreneurial Development
✓	Employability	☐	Innovation
☐	Intellectual Property Right		

306

Syllabus Revision

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 224CS2A1CQ / Advanced Java   **Semester: I**

Unit	Existing	Changes
1	Programs using Java control statements	
2	Programs using simple applets	
3	Program to create applets incorporating features such as images, shapes, background and foreground color	
4	Create an application using simple GUI	
5	Program to Perform some applications using Java Bean	
6	Create an application using Swing	
7	Program to perform some operations using Threads	Demonstrate AWT Components with Event Handling.
8	Program to perform Session Tracking	
9	Java servlet program to implement sendredirect () Method (using Http servlet class).	
10	Servlet Program using HTTP Servlet	
11	Program to perform client server interface using RMI	Create a Web Application using JSP
12	JDBC to interact with database.	

PERCENTAGE OF SYLLABUS REVISED: 20 %

COURSE FOCUS ON:

✓	Skill Development	☐	Entrepreneurial Development
✓	Employability	☐	Innovation
☐	Intellectual Property Right		

307

		BoS
Dr. N.G.P. ARTS AND SCIENCE COLLEGE		
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)		6th
(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)		
Dr. N.G.P. - KalapattiRoad, Coimbatore – 641 048, Tamil Nadu, India		
Web : www.drngpasc.ac.in	Email : info@drngpasc.ac.in	Phone : +91-422-2369100		

Syllabus Revision

Faculty : Computer Science   **Board : Computer Science with Data Analytics**

Course Code / Name: 224DA2A1DC / Web Intelligence (DSE I)   **Semester: I**

Unit	Existing	Changes
I	Introduction - Web Mining: Information Retrieval and Web Search - Basic Concepts of Information Retrieval - Information Retrieval Models - Relevance Feedback - Evaluation Measures - Text and Web Page Pre-Processing - Web Search - Meta Search: Combining Multiple Rankings - Web Spamming	
II	Social Network Analysis - Co-Citation and Bibliographic Coupling - Page Rank - Web Crawling: Basic Crawler Algorithm - Implementation Issues - Universal Crawlers - Focused Crawlers - Topical Crawlers: Topical Locality and Cues - Best-First Variations - Adaptation - Evaluation - Crawler Ethics and Conflicts	Semantic web - Web Intelligence: Levels - Goals - Characteristics - Challenges and issues Tools for web crawling
III	The Problem of Opinion Mining - Document Sentiment Classification - Sentence Subjectivity and Sentiment Classification – Opinion Lexicon Expansion - Aspect-Based Opinion Mining – Mining Comparative Opinions - Opinion Search and Retrieval	
IV	Google Analytics: Introduction - Cookies - Accounts vs Property - Tracking Code -Tracking Unique Visitors - Demographics - Page Views and Bounce Rate Acquisitions -Custom Reporting	
V	Applications: Filters - Ecommerce Tracking - Real Time Reports - Customer Data-Alert - Adwords Linking - Adsense Linking - Attribution Modeling - Segmentation - Campaign Tracking - Multi-Channel Attribution	Recommendation engines based on users, items and contents

PERCENTAGE OF SYLLABUS REVISED: 20 %

COURSE FOCUS ON:

✓	Skill Development	✓	Employability
☐	Intellectual Property Right	☐	Entrepreneurial Development
☐	Innovation		

Dr. NGPASC
COIMBATORE | INDIA

308

Syllabus Revision - New Course

Faculty: Computer Science   **Board: Computer Science with Data Analytics**

Course Code/ Name: 224DA2A1CC–Design and Analysis of Algorithms   **Semester: I**

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUS ON:

✓	Skill Development	✓	Employability
☐	Intellectual Property Right	☐	Entrepreneurial Development
☐	Innovation		

Dr. NGPASC
COIMBATORE | INDIA

Syllabus Revision – New Course

Faculty : Computer Science　　　　　**Board : Computer Science with Data Analytics**

Course Code / Name: 224DA2A1DA/ DIGITAL IMAGE PROCESSING (DSE I)　Semester: I

PERCENTAGE OF SYLLABUS REVISED: 100 %

COURSE FOCUS ON:

✓	Skill Development	✓	Employability
☐	Intellectual Property Right	☐	Entrepreneurial Development
☐	Innovation		

310

Syllabus Revision – New Course

Faculty: Computer Science   **Board: Computer Science with Data Analytics**

Course Code/ Name: 224DA2A1DB - INFORMATION RETRIEVAL (DSE – I)   **Semester: I**

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUS ON:

[✓] Skill Development   [✓] Employability

[ ] Intellectual Property Right   [ ] Entrepreneurial Development

[ ] Innovation

Dr. NGPASC
COIMBATORE | INDIA

3u

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore
Approved by Government of Tamilnadu and Accredited by NAAC with 'A++' Grade (3rdCycle)
Dr. N.G.P.- Kalapatti Road, Coimbatore-641048, Tamilnadu, India
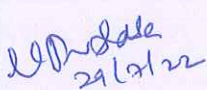Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone:+91-422-2369100
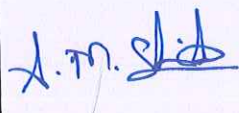
ATTENDANCE OF THE SIXTH BOARD OF STUDIES MEETING

Faculty: Computer Science **Board: Data Analytics**

VENUE   : Audio Visual Room A Block (Hall No. 218)
DATE   : 29/07/2022
TIME   : 10.00 AM

The following members were present for the Board of Studies meeting

S.NO.	NAME	DESIGNATION	SIGNATURE
1.	Dr. V. Pream Sudha HoD Incharge Department of Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Chairman	*signature* 29/7/22
2.	Dr. J. Satheesh Kumar Associate Professor Department of Computer Applications Bharathiar University, Coimbatore	Member (Subject Expert) (Nominated by Vice Chancellor)	*signature* 29/7/22
3.	Dr. Malar B Professor Department of Data Science PSG College of Technology, Coimbatore	Member (Subject Expert) (Nominated by Academic Council)	ABSENT
4.	Dr. S. Bharathidason Professor & Head Department of Computer Science Loyola College, Chennai	Member (Subject Expert) (Nominated by Academic Council)	*signature*
5.	Ms. Jennifer Xavier Project Manager Accenture AI, Bengaluru	Member (Industrial expert)	*signature*
6.	Mr. A. M. Sabarish Associate Data Engineer Cloud Destination Coimbatore	Alumni	*signature*

Cont...

Page | 1

Dr. NGPASC
COIMBATORE | INDIA

312

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore
Approved by Government of Tamilnadu and Accredited by NAAC with 'A++' Grade (3rdCycle)
Dr. N.G.P.- Kalapatti Road, Coimbatore-641048, Tamilnadu, India
Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone:+91-422-2369100

S.NO.	NAME	DESIGNATION	SIGNATURE
8.	Dr NIKUPPUCHAMY Dr. N.G.P. ASC Coimbatore	Co-opted Member (Tamil)	29/07/22
9.	Dr. R Vithya Prabha Dr. N.G.P. ASC Coimbatore	Co-opted Member (English)	R.V-eRe 29/7/22
10.	Dr R. Sowrirajan. Dr.NGP ASC Coimbatore	Co-opted Member (Mathematics)	
11.	Santhosh Kumar. S II M.Sc CSDA	Student Representative	Santhosh Kumar
12.	C. KARPAGAM DR. NGP. COIMBATORE	Member	C. 29/7/2022
13.	Bharathi Anbarasan Dr. N.G.P. ASC, Cbe	Member	29/7/22
14.	R. Ranjani Dr-N.G.P ASC, Cbe	Member	29/7/22

Date : 29/07/2022

Dr. NGPASC
COIMBATORE | INDIA

Dr.V. Rajendran
CHAIRMAN

(Dr. V Pream Sudha)
BoS Chairman/HoD
Department of Computer Science with Data Analytics
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048