

Prof. K. Purushotham
M.A., ASDTE, M.Phil., Ph.D.
REGISTRAR &
Professor of English



KAKATIYA UNIVERSITY
Accredited with 'A' Grade by NAAC
Vidyaranya-puri, WARANGAL - 506009
Telangana - INDIA

(+91) 0870 2438866 (Off, Mobile: 9849171737, Fax: 0870-2438800, e-mail: registrar@kakatiya.ac.in)

Click here to enter a date.

28-10-2017

No. 1196 /82/KU/2017

To
All the Principals
University/ Constituent and Affiliated Colleges offering
Post-graduation (Non-professional) Courses
KAKATIYA UNIVERSITY

Sir/Madam,
Sub: SYLLABI - PG (Non-professional) Courses - 2017-2018 - Choice Based Credit System (CBCS) - Syllabus of various subjects with effect from 2017-18 - Regarding

In pursuance the Standing Committee of the Academic Senate (2017-18) held on 13 September 2017, the Vice-Chancellor has accorded approval to syllabi of various subjects for Implementation to the Post-graduate (non-professional) courses under CBCS, with effect from the academic year 2017-2018. The following is the list of the PG programs.

1. **Faculty of Arts:** English, Telugu, Hindi, Sanskrit
2. **Faculty of Science:** Botany, Zoology, Physics, Chemistry, Biochemistry, Biotechnology, Micro-Biology, Geology, Mathematics, Applied Mathematics, Statistics, and Computer Science, Computer Applications, and Psychology.
3. **Faculty of Social Sciences:** Public Administration, HRM, History, Tourism Management, Political Science, Economics, Social Work, Sociology, Gender Studies, and Journalism and Mass Communications.
4. **Commerce & Business Management:** Master of Commerce, M.Com (Banking & Insurance), M.Com. (Computer Applications); M.Com (Financial Accounting), and Master of Business Administration.

CBCS based syllabus of the above programs are made available in the Kakatiya University website (http://kakatiya.ac.in/course_names/2).

Action may please be initiated accordingly.

Thanks and regards

Yours Sincerely,

K. Purushotham

REGISTRAR

Copy to:

1. All the Deans of Faculty, KU
2. The Dean, College Development Council, KU
3. The Dean, Academic Audit, KU
4. All the Chairpersons, Board of Studies, KU
5. The Controller/Additional Controller of Examinations (PG and Confidential), KU
6. The Secretary to the Vice-Chancellor, KU
7. The SF

Resl. H.No. 2-S-200/1, Nakkalagutta, Hanamkonda, Warangal - 506 001, Telangana - India

Prof. K. Purushotham
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No. 1196 /B2/KU/2017

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28-10-2017

To
All the Principals
University/ Constituent and Affiliated Colleges offering
Post-graduation (Non-professional) Courses
KAKATIYA UNIVERSITY

Sir/Madam,

Sub: SYLLABI - PG (Non-professional) Courses – 2017-2018 - Choice Based Credit System
(CBCS) – Syllabus of various subjects with effect from 2017-18 – Regarding

In pursuance the Standing Committee of the Academic Senate (2017-18) held on 13 September 2017, the Vice-Chancellor has accorded approval to syllabi of various subjects for implementation to the Post-graduate (non-professional) courses under CBCS, with effect from the academic year 2017-2018. The following is the list of the PG programs.

1. **Faculty of Arts:** English, Telugu, Hindi, Sanskrit
2. **Faculty of Science:** Botany, Zoology, Physics, Chemistry, Biochemistry, Biotechnology, Micro-Biology, Geology, Mathematics, Applied Mathematics, Statistics, and Computer Science, Computer Applications, and Psychology.
3. **Faculty of Social Sciences:** Public Administration, HRM, History, Tourism Management, Political Science, Economics, Social Work, Sociology, Gender Studies, and Journalism and Mass Communications.
4. **Commerce & Business Management:** Master of Commerce, M.Com (Banking & Insurance), M.Com. (Computer Applications); M.Com (Financial Accounting), and Master of Business Administration.

CBCS based syllabus of the above programs are made available in the Kakatiya University website (http://kakatiya.ac.in/course_names/2).

Action may please be initiated accordingly.

Thanks and regards

Yours Sincerely,

REGISTRAR

Copy to:

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2. The Dean, College Development Council, KU
3. The Dean, Academic Audit, KU
4. All the Chairpersons, Board of Studies, KU
5. The Controller/Additional Controller of Examinations (PG and Confidential), KU
6. The Secretary to the Vice-Chancellor, KU
7. The SF

Resi. H.No. 2-5-200/1, Nakkalagutta, Hanamkonda, Warangal - 506 001, Telangana - India

Item No. 34.02.032

SYLLABUS – Approval of revised syllabus of B.Pharmacy II, III and IV Years from 2017-2018 admitted batch under Choice Based Credit System (CBCS) for implementation – Ratification of.

RESOLUTIONS ADOPTED AT THE **SECOND MEETING** OF THE **STANDING COM** OF **ACADEMIC SENATE HELD ON 30, JANUARY 2019.**

RESOLVED TO ratify the action taken by the Vice-Chancellor in implem the revised syllabus of B.Pharmacy II, III and IV years under Choice Credit System (CBCS) from the academic year 2018-19 for the st admitted during the academic year 2017-2018.

Note submitted to the Standing Committee of Academic Senate is enclo

Item No. (2.8)

Subject: SYLLABUS – Approval of revised syllabus of B.Pharmacy II, III and IV Years for the first admitted batch under Choice Based Credit System (CBCS) for implementation – Ratification

The Chairperson, Board of Studies in Pharmaceutical Sciences, No. 04/BOS/UCPSC/KU/2018, dated 23/10/2018, submitted the revised syllabus of B.Pharmacy II, III and IV years course for the first admitted batch under Choice Based Credit System (CBCS). The Board of Studies in Pharmaceutical Sciences at its meeting held on 03/10/2018 recommended the revised syllabus from academic year 2018-2019.

In view of urgency, the Vice-Chancellor, in anticipation of the Standing Committee of the Academic Senate, accorded approval for the revised syllabus of B.Pharmacy II, III and IV as recommended by the Board of Studies. The syllabus was circulated among the faculty members by No. 1358/B2/Acad/KU/2018, dt.02/11/2018 and also kept on the website www.kakatiya.ac.in.

Therefore, the matter is placed before the Standing Committee of the Academic Senate for ratification of the action taken by the Vice-Chancellor.

UNIVERSITY COLLEGE OF PHARMACEUTIC
KAKATIYA UNIVERSITY, VIDYARANYAPURI, WARANGAL-5

Prof. Y. Narsimha Reddy
Chairperson
BOS in Pharmaceutical Sciences

Mobile
Phone
Email:

No. 04/BOS/UCPSc/KU/2018

To
The Registrar,
Kakatiya University
Warangal – 506 009

Sir,

Sub: Implementation of PCI syllabus for Bachelor of Pharmacy (B.Pharm)
Based Credit System (CBCS) - Reg.

Ref: Pharmacy Council of India (PCI) notification Ref. No 14-136-2016-PC
(53095- 55431) Dated: 21-12-2016.

(Through proper channel)

With reference to the subject cited above, I am herewith enclosing minutes of the Board of Studies in B.Pharm course held on 3rd October 2018 at 11.00 AM in the Kakatiya University, Warangal to implement the PCI syllabus of B.Pharm II, III & IV for the 2018 admitted batch under the Choice Based Credit System (CBCS). Kindly take the approval of the syllabus.

The Board of Studies in Sciences in UG held on 03-10-2020 in the office of the principal Warangal, following members

- 1. Prof. Y. Narsimha Reddy -
- 2. Prof. V. Kishan Membr
- 3. Prof. M. Saranga Panu ... Membr
- 4. Dr. G. Sammaiah Membr
- 5. Dr. N. PRASAD Membr
- 6. Dr. J. Venkateshwar Rao ... Membr
- 7. Prof. M. Ajitha External m

Agenda :

- 1. Approval of B. Pharm II yr (2018-2019), B. and B. Pharm IV yr (2020-2021) syllabus a Council of India (PCI).
- 2. Any other matter with the permission

MINUTES OF THE MEETING.

It is resolved to implement with minor modification.

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The Board of Studies in Pharmaceutical Sciences (UG) held on 03-10-2018 at office of the Principal, UCPSc, K.U. Warangal, following members were present:

1. Prof.Y.Narsimha Reddy ----- Chairman
2. Prof.V.Kishan ----- Member
3. Prof.M.Saranga Pani ----- Member
4. Dr.G.sammaiah ----- Member
5. Dr.N.Prasad ----- Member
6. J.Venkateswar Rao ----- Member
7. Prof.M.Ajitha ----- External Member

Agenda:

1. Approval of B.Pharm II Year (2018-2019), B.Pharm III Year (2019-2020) and B (2020 – 2021) Syllabus as per Pharmacy Council of India (PCI) Choice Based C (CBCS).
2. Any other matter with the permission of Chair.

Minutes:

1. It is resolved to implement PCI Syllabus (CBCS) with minor modifications.
2. The syllabus is applicable to the 2017–2018 admitted batch onwards.

PROF. K. PURUSHOTHAM
REGISTRAR



KAKATIYA
VIDYALAYA
WARANGAL

No. 1358 /B2/ACAD/KU/2018

The Principals of University and
Affiliated Colleges offering B.Pharm. course
KAKATIYA UNIVERSITY

Sub:- SYLLABUS - Sending the PCI approved
and IV year from 2017-2018 admitted
Credit System (CBCS) - Regarding.

Ref:- Lr. No. 04/BOS/UCPSc/KU/2018, dated
Chairperson, Board of Studies in Pharmacy

Sir/Madam,

I am to inform you that the Chairperson, Board of
Sciences, KU has sent the syllabus of PCI approved syllabus of
course under Choice Based Credit System as recommended
meeting held on 3rd October, 2018 for implementation from 20
Dean, Faculty of Pharmaceutical Sciences, KU forwarded the m

In view of urgency, the Vice-Chancellor, in anticipation
bodies, has accorded approval for implementation of syllabus
B.Pharm. II, III and IV year course under Choice Based Credit
admitted batch.

The syllabus is available at the University Website www
may be brought to the notice of the students and the staff conce

Encl.: As stated.



Office
Kakatiya
Vidyaranyaपुरi, Warangal

No. 1649 /B2/KU/2018

To
The Controller of Examinations
Kakatiya University
WARANGAL
Sir

Sub: ACADEMIC – CBCS – B.Tech (4-Year Program) – Introduction of Choice Based Credit System (CBCS) in accordance with AICTE Norms – Framing of Revised Rules and Regulations Regarding

Ref: 1. DFOET/UCE/KU/2018 dated November 29, 2018

The Vice-Chancellor, in anticipation of the approval of the Standing Committee of the Senate, approved the proposal submitted by the Dean, Faculty of Engineering, Kakatiya University, and adopted the Revised Rules and Regulations, under which the 4-Year Under-graduation program in B.Tech (Bachelor of Technology) will be conducted in constituent and affiliated colleges of the University.

The adopted Rules and Regulations will be effective from the academic year 2018-19.

The adopted Rules and Regulations are enclosed for necessary action on all matters related to conduct of, evaluation of, and declaration of results of the Under-graduation program in B.Tech (Bachelor of Technology), across constituent and affiliated colleges of the University.

This is for your information and necessary action.

Item No. (37.02.02)

PG COURSES – SYLLABUS – Approval of Revised scheme & syllabus of P.G. Diploma in Sericulture (I & II Semesters) under CBCS pattern for the academic year 2021-2022 – Submission for ratification

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RESOLUTION ADOPTED AT THE FIRST MEETING OF THE STANDING COMMITTEE OF THE ACADEMIC SENATE HELD ON 3RD FEBRUARY 2022.

RESOLVED to ratify the action taken by the Vice-Chancellor in implementing the revised scheme and syllabus of P. G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern as recommended by the Board of Studies for the students admitted to the course for the academic year 2021-2022 onwards.

(The note submitted to the Standing Committee of the Academic Senate is enclosed)

ITEM No.(1. 02)

PG COURSES – SYLLABUS – Approval of Revised scheme & syllabus of P.G. Diploma in Sericulture (I & II Semesters) under CBCS pattern for the academic year 2021-2022 – Submission for ratification.

~|~

It is to submit that the Chairman, Board of Studies in P.G. Diploma in Sericulture (I& II Semesters) Kakatiya University through her letter No.19/A/BOS /Zoo/ Seri/ UC/KU/2021 dated 08/11/2021 has submitted the revised Scheme and syllabus of P.G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern duly approved by the Board of Studies in P. G. Diploma in Sericulture, Kakatiya University through the Dean, Faculty of Science, KU for implementation to the students admitted to course for the academic year 2021-2022

Keeping in view of the urgency c. the commencement of class work, the Vice- Chancellor in anticipation of approval by the Standing Committee of the Academic Senate has accorded approval for the revised scheme and syllabus of P. G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern as recommended by the Board of Studies in P. G. Diploma in Sericulture for implementation to the students admitted to the course for the academic year 2021-2022 onwards.

Therefore, the matter is placed before the Standing Committee of the Academic Senate for examination and ratification.

DRAFT RESOLUTIONS

Resolved to ratify the action taken by the Vice-Chancellor in implementing the revised scheme and syllabus of P. G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern as recommended by the Board of Studies for the students admitted to the course for the academic year 2021-2022 onwards.



OFFICE OF THE REGISTRAR
KAKATIYA UNIVERSITY
WARANGAL - 506009

Phones: 0870 2438866, Mobile: (+91) 9849171737, E-mail: registrar@kakatiya.ac.in

No. 16 /B3/KU/2022

Date: 06 - 01 - 2022

To
The Principal
University College
Kakatiya University, Warangal

Sub: PG COURSES - SYLLABUS - Revised scheme & syllabus of P.G. Diploma in Sericulture (I & II Semesters) under CBCS pattern for the academic year 2021-2022 - Implementation of - Regarding.

Ref: Letter No.19/A/BOS/Zoo/Seri/UC/KU/2021 dated 08/11/2021 of the Chairperson, Board of Studies in Sericulture, KU duly recommended by the Board of Studies.

~!~

Sir,

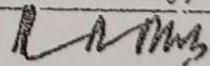
I am to inform you that the Chairman, Board of Studies in P.G. Diploma in Sericulture (I & II Semesters) Kakatiya University through his letter under reference cited has communicated the revised Scheme and syllabus of P.G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern duly approved by the Board of Studies in P. G. Diploma in Sericulture, Kakatiya University for implementation to the students seek admission in to I year course for the academic year 2021-2022

Keeping in view of the urgency of the commencement of class work, the Vice-Chancellor in anticipation of approval by the Standing Committee of the Academic Senate has accorded approval for the revised scheme and syllabus of P. G. Diploma in Sericulture (I & II Semesters) Course under CBCS pattern as recommended by the Board of Studies in P. G. Diploma in Sericulture for implementation to the students seek admission into the I year course for the academic year 2021-2022 onwards.

The same scheme and syllabus of the course shall be placed on the KU Website: kakatiya.ac.in

As such you are hereby informed to bring it to the notice of the students and staff concerned and initiate action accordingly.

Yours faithfully,


REGISTRAR

Copy to:-

- 1) The Dean, Faculty of Science, KU
- 2) The Head Dept. of Zoology, KU
- 3) The Chairperson, Board of Studies in Zoology, KU
- 4) The Controller of Examinations, KU
- 5) The Additional Controller of Exams (P.G.)/ Confidential
- 6) The SF.

Dr. K. SUJATHA
Chairperson, BOS in Sericulture,
Sericulture Unit, Department of Zoology,
Warangal, Kakatiya University
(Accredited by NAAC with 'A' Grade)



Telangana-506 009, T. S., India
Email: k.sujatha8900@gmail.com
Mobile: 9849296672

Lr. No. 19/A/BOS/Zoo/Seri/UC/KU/2021

Date: 8/11/2021

To,
The Registrar,
University College,
Kakatiya University,
Warangal.

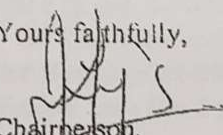
Sub: Approval – revised syllabus of PG diploma in Sericulture PGDS – Syllabi of open elective and foundation course papers submission req. rog.

With the subject cited above I am herewith enclosing the approved revised syllabus (semester pattern) along with the distribution of marks and credits of PG diploma in sericulture (PGDS) being offered in University college campus, Kakatiya University under Choice Based Credit System (CBCS) with effect from 2021 – 2022 academic year. The approved revised syllabi are being enclosed.

Hence, kindly accept and acknowledge with necessary approval from the appropriate body for the implementation from the current academic year (2021 -2022).

Thanking you,

Yours faithfully,


Chairperson,
BOS in sericulture
Dr. K. SUJATHA

Asst. Professor of Sericulture

Enclosures:

1. Approved syllabi of semester pattern of PGDS in Sericulture
2. Approved syllabi, distribution of marks and credits for open elective and foundation course

Copy to

1. The Coordinator, IQAC, KU, Warangal.
2. The Principal, University College, KU, Warangal
3. Head, Dept of Zoology, Ku, Warangal

MINUTES OF THE MEETING

Revised syllabus for PDGS sericulture course (CBCS & CAGP)

Proceedings

The chairman and members of Board of Studies, Sericulture – Kakatiya University met on 16-11-2021 at 11.00 AM in the chamber of Head, Dept of Zoology with following members

- 1) Dr. K. Sujatha,
Asst Prof of Sericulture, KU
- 2) Dr. M. Estari,
Incharge, Sericulture Unit, KU
- 3) Dr. Kaneez Fatima,
Asst Prof of Sericulture, KU

Chairperson

Member

Member

Chairperson BOS in sericulture welcomed the members to the meeting and presented the following agenda.

1. Approval of newly constructed syllabus as per revised CBCS regulations

- A) The Board of Studies in Sericulture (PGDS) at its meeting held on 10th November, 2021 recommended the distribution of credit pattern with modified syllabus under CBCS and CAGP regulations to be considered for the implementation from the current academic year 2021-2022 for PGDS.
- B) Introduction of one foundation course and open elective along with project work experience has been finalized and approved.
- C) The scheme of examination, curriculum and allocation of marks for each paper were finalized and approved by the members.

The approved syllabus of the above mentioned course is enclosed herewith for circulation to the dept and university website.

Chairperson BOS
Dr. K. SUJATHA
Asst. Professor of Sericulture
Chairperson, BOS Sericulture
Kakatiya University, Warangal.
Head, Member

External Member

External Member

Member
Dr. KANEENZ FATIMA
Asst. Professor in Sericulture
Kakatiya University
Warangal, Telangana

2nd Meeting of the Standing Committee of Academic Senate

24 October 2017

Item No. 33.02.039

Subject: SYLLABUS – Adoption of CBCS System in UG/PG/PG Diploma/Certificate Courses offered in Distance Education Mode with effect from 2018-19 – Ratification of

RESOLUTION ADOPTED AT THE SECOND MEETING OF THE STANDING COMMITTEE OF THE ACADEMIC SENATE HELD ON 24TH OCTOBER 2017

1. Resolved to adopt Semester-wise Syllabus along with pattern and scheme of examination under Choice Based Credit System (CBCS) for all the UG/PG/PG Diploma/Certificate Courses offered by the School of Distance Learning and Continuing Education (SDLCE) in Distance Mode, from the academic year 2018-19.
2. Resolved to adapt the CBCS syllabus, pattern, scheme etc as approved by the University for regular Under-graduate and Post-graduate programs.
3. Resolved to adapt the 'Self-learning' material for all the Under-graduate, Post-graduate, PG Diploma, and Certificate course offered by the SDLCE in distance mode from the academic year 2018-2019.

Note submitted to the Standing Committee of the Academic Senate is enclosed



Item No. (02.01)

SYLLABUS – Adoption of CBCS System in UG/PG/PG Diploma/Certificate Courses offered in Distance Education Mode w.e.f. 2018-19 – Ratification of.

The, Director, School of Distance Learning and Continuing Education (SDLCE), KU vide Lr. No. 905/DP/SDLCE/KU/2017, dated: 19 September 2017 stated that the UGC-DEB, New Delhi has issued new Regulations 2017 and accordingly invited applications from the institutions offering programs through distance mode commencing from the academic year 2018-19. Accordingly, the Director, SDLCE proposed to offer UG/PG/PG Diploma/Certificate courses from the academic year 2018-19 onwards under Choice Based Credit System (CBCS), and requested to adopt the prevailing CBCS scheme, syllabus, scheme of examination, credits and internal assessments as adopted by Kakatiya University for the UG/PG programs.

The Vice-Chancellor, while ratifying the implementation of Common Core (Year Wise Scheme) Syllabus in all the UG/PG/PG Diploma/Certificate courses offered in Distance Mode at School of Distance Learning and Continuing Education (SDLCE) till 2017-18, in anticipation of the approval of the Standing Committee of Academic Senate, accorded approval for the resolutions of the Program Committee of SDLCE; as follows:

4. To adopt Semester-wise Syllabus along with pattern and scheme of examination under Choice Based Credit System (CBCS) for all the UG/PG/PG Diploma/Certificate Courses offered by the SDLCE in Distance Education Mode, from the academic year 2018-19.
5. To adopt the CBCS syllabus, pattern, scheme etc as approved by the University for regular Under-graduate and Post-graduate programs.
6. To submit proposals to the UGC-DEB (University Grants Commission – Distance Education Board) to start 13 (thirteen) new programs from the academic year 2018-19, as approved by the Program Committee of SDLCE on 19 September 2017.

Therefore, the action taken by the Vice-Chancellor is submitted to the Standing Committee of Academic Senate for ratification.

DRAFT RESOLUTION

To ratify the action taken by the Vice-Chancellor in ratifying the implementation of Common Core (Year Wise Scheme) Syllabus in all the UG/PG/PG Diploma/Certificate courses offered in Distance Mode at School of Distance Learning and Continuing Education (SDLCE).



KAKATIYA UNIVERSITY

File No.

Branch : **ACADEMIC**

Page No. (02)

Unit : B2

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No.

SUBJECT: SDLCE - UG/PG/PG Diploma/Certificate Course ODL programmes under CBCS scheme - Approval of the University to adopt the syllabus of regular courses - Regarding.

Referen

The Director, School of Distance Learning & Continuing Education , KU vide his Lr. No.905/DP/SDLCE/KU/2017, dated 19th September, 2017 stated that the UGC-DEB, New Delhi has issued new Regulations 2017 and accordingly invited applications from the institutions offering programmes through distance mode commencing from the academic year 2018-2019.

As such, SDLCE has proposed to offer UG/PG/PG Diploma/Certificate courses from the academic year 2018-2019 onwards under Choice Based Credit System (CBCS) and requested to permit the Director, SDLCE, KU to adopt the prevailing CBCS scheme, syllabus, scheme of examination, credits and internal assessments of the UG/PG programmes being offered at the University and to accord approval for semester-wise syllabus as per CBCS pattern for the New programmes to be offered by the SDLCE through distance mode from the academic year 2018-2019 and also to submit the same to the UGC-DEB, New Delhi seeking its approval. He has enclosed the minutes of Programme Committee of the SDLCE to the effect.

Further, he has informed that the University has started CBCS system pattern from the academic year 2016-2017. However, the SDLCE has continued the old pattern i.e., year-wise system up to the academic year 2017-2018. Further, he has requested to ratify the same.

Submitted for Orders.

[Signature]
21/9/17

To be referred to SC
for ratification
[Signature]
20/9.

[Signature]
21/9/17

Prof. K. Purushotham
M.A., PGDTE ALPNI, Ph.D.
REGISTRAR &
Professor of English



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No. 1151 /B2/KU/2017

October 11, 2017

12-10-2017

To
The Director
School of Distance Learning and Continuing Education
Kakatiya University
WARANGAL

Sir,

Sub: SYLLABUS – Adoption of CBCS System in UG/PG/PG Diploma/Certificate Courses offered
in Distance Education Mode w.e.f. 2018-19 – Permission – Accorded - Regarding
Ref: Your letter No. 905/DP/SDLCE/KU/2017, dated: 19 September 2017

The Vice-Chancellor, while ratifying the Implementation of Common Core (Year Wise Scheme) Syllabus in all the UG/PG/PG Diploma/Certificate courses offered in Distance Mode at School of Distance Learning and Continuing Education (SDLCE) till 2017-18, in anticipation of the approval of the Standing Committee of Academic Senate, accorded approval for the resolutions of the Program Committee of SDLCE; as follows:

1. To adopt Semester-wise Syllabus under Choice Based Credit System (CBCS) for all the UG/PG/PG Diploma/Certificate Courses offered by the SDLCE in Distance Education Mode, from the academic year 2018-19.
2. To adopt the CBCS syllabus, pattern, scheme etc as approved by the University for regular Under-graduate and Post-graduate programs.
3. To submit proposals to the UGC-DEB (University Grants Commission – Distance Education Board) to start 13 (thirteen) new programs from the academic year 2018-19, as approved by the Program Committee of SDLCE on 19 September 2017.

The Director, SDLCE is further required to initiate necessary actions to frame CBCS syllabus, pattern and scheme for all such programs offered in distance education only, for which the university has not yet approved CBCS syllabus.

The above may be brought to the notice of all the concerned Deans of Faculties; Chairpersons, Boards of Studies; Students and other concerned.

Thanks and regards,

REGISTRAR

Contd...P/2

Resl. H.No. 2-5-200/1, Nakkalagutta, Hanamkonda, Warangal – 506 001, Telangana - India

Prof. K. Purushotham
M.A., PGDTE, M.Phil., Ph.D.
REGISTRAR &
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3. The Dean, College Development Council, KU
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6. The Secretary to the Vice-Chancellor, KU
7. The SF

Resl. H.No. 2-5-200/1, Nakkalagutta, Hanamkonda, Warangal – 506 001, Telangana - India

PROCEEDINGS OF THE COMMISSIONER OF COLLEGIATE EDUCATION &
STATE PROJECT DIRECTOR, , (RUSA)
PRESENT : SRI . NAVIN MITTAL, IAS

Sub: RUSA 2.0, Hyderabad – Sanction of Rs.6.00 Crores towards Construction of K-Hub at Kakatiya University, Warangal under Component-10 (Research, Innovation & Quality Improvement) of RUSA 2.0. - Administrative Sanction Orders-Issued.

Ref: 1. Minutes of the 12th PAB Meeting of MHRD held on 25-05-2018
2. F.No.24-25/2014-U.Policy(TLMulti-Gen, SC, ST) of MHRD, GoI., dated 15-07-2019
3. Lr.No.103/UGC/KU/2020 dated 27-07-2020 of the Registrar, Kakatiya University, Warangal
4. Lr.No.EE/TSEWIDC/WGL/K-Hub/2020-21 dated 24-07-2020 of the Executive Engineer, TSEWIDC, Warangal

Adverting to the subject and vide reference 1st cited, Kakatiya University was approved with a total grant of Rs.50.00 Crores in the sharing pattern of 60:40 Central Share and State Share respectively, under Component-10, (Research, Innovation & Quality Improvement) of RUSA 2.0. Consequently, the MHRD, New Delhi, vide reference 2nd cited has released Rs.4.50 Crores as 1st installment of Central Share. Subsequently, the respective University was informed to submit the Detailed Project Report(DPR) and accordingly, the Registrar, Kakatiya University vide reference 3rd cited has forwarded the Plans, Designs and Estimates to the tune of Rs.6.00 Crores (Rupees Six Crores only), for the construction of K-Hub (Entrepreneurship & Skill Development Hub) submitted vide reference 4th cited, by the Executive Engineer, Telangana State Education Welfare & Infrastructure Development Corporation) TSEWIDC, Warangal. The details of the works are as follows:

1. Civil Works(Construction of Building)
2. Internal Sanitary and Water Supply
3. Internal Electrification

Further, the estimates include Provisions for Interiors & Furniture, Open-air Auditorium, Landscaping, Generator along with Room, TSNPDCL Charges, Price adjustment of Cement & Steel and LS provision for unforeseen items and Service Charges all put together estimated to the tune of Rs.6.00 Crores (inclusive of items 1, 2 and 3 mentioned above).

Under the circumstances stated herein above and after detailed examination of the DPR for the construction of K-Hub at Kakatiya University, Warangal, sanction is hereby accorded to the tune of Rs.6.00 Crores(Rupees Six Crores only) for the works (inclusive of all provisions

and charges) mentioned above. Any savings accrued at the time of execution as per the prices in vogue at that point of time shall be utilized for the purpose of K-Hub only, after seeking prior permission of the State Project Director, RUSA. The Registrar, Kakatiya University, Warangal is requested to communicate these Proceedings to the Executive Engineer, TSEWIDC, Warangal with instructions to execute the said works immediately. Furthermore, it is informed that RUSA is a norm based outcome dependent programme and all guidelines in vogue are to be strictly adhered to.

Signature Not Verified

Digitally signed by NAVIN MITTAL IAS
Date: 2020.07.29 18:30:33 IST
Reason: Approved

Commissioner of Collegiate Education &
State Project Director (RUSA)

To
The Registrar,
Kakatiya University, Warangal

Copy to:

1. The Chief Engineer, TSEWIDC, Hyderabad
2. The Executive Engineer, Warangal
3. A.O. RUSA, Nampally, Hyderabad

CONTRACT

THIS AGREEMENT dated 24.09.2021 is made **BETWEEN** and shall have retrospective effect so as to have started on the **Commencement Date:01.10.2021**

- (1) **TELANGANA STATE COUNCIL OF HIGHER EDUCATION** whose administrative offices are at JNAFU Building, 1st Floor, Mahaveer Marg, opp. Mahaveer Hospital, Masab Tank, Hyderabad, Telangana 500028 INDIA (“Funding Body”); and
- (2) **BANGOR UNIVERSITY** (registered charity number 1141565) whose administrative offices are at College Road Bangor Gwynedd LL57 2DG (hereinafter “Consultant 1”)
- (3) **ABERYSTYWTH UNIVERSITY** (registered charity number 1145141) whose administrative offices are at Visualisation Centre, Penglais, Aberystwyth, SY23 3BF (hereinafter “Consultant 2”); and
- (3) **KAKATIYA UNIVERSITY**, (whose administrative offices are at nh-563, Vidyananyapuri, Hanamkonda, Warangal, Telangana 506009, INDIA (hereinafter “Teaching Institution 1”); and
- (4) **OSMANIA UNIVERISTY**, whose administrative offices are at Osmania University Main Road, Amberpet, Hyderabad, Telangana 500007, INDIA (Teaching Institution 2).

Each a “Party” and collectively “the Parties”.

WHEREAS

- A. The Funding Body invited proposals from Welsh universities to support curriculum development in Telangana; and
- B. Consultant 1 and Consultant 2 responded to the invitation and the Funding Body has awarded this contract (the “Contract”) to them to carry out the Project as detailed under Schedule 1 for the provision of service; and
- C. Consultant 1 and Consultant 2 shall each ensure delivery of the Project as envisaged in Schedule 1, and shall through their allocated teams, work collaboratively with Teaching Institution 1 and Teaching Institution 2 to achieve the aims.

This Contract sets out the terms under which the Parties shall perform the Allocated Work and the recompense thereof:

1. DEFINITIONS

1.1 The following expressions shall have the following meanings in this Contract including its recitals, unless the context requires otherwise:

‘Allocated Work’	shall mean the work that each of the relevant Parties will be performing as defined in the Project at Schedule I.
‘Arising Intellectual Property’	shall mean any Intellectual Property which is generated or first reduced to practice by any Party or Parties directly as a result of the work undertaken in accordance with this Contract.
‘Background Intellectual Property’	shall mean any Intellectual Property excluding Arising Intellectual Property owned or controlled by any Party prior to commencement of or independently from the Project, and which the owning Party contributes or uses in the course of performing the Project.
‘Commencement Date’:	1 st October 2021.
‘Confidential Information’	shall mean any Background Intellectual Property disclosed by one Party to the others for use in the Project and identified as confidential before or at the time of disclosure and any Arising Intellectual Property in which that Party owns the Intellectual Property.
‘Consultant(s)’	shall be Professor Nichola Callow for Consultant 1 and Professor Tim Woods for Consultant 2.
‘Data Protection Legislation’ or ‘DPL’	shall mean all applicable data protection and privacy legislation in force from time to time in the UK including the General Data Protection Regulation ((EU) 2016/679); the Data Protection Act 2018; the Privacy and Electronic Communications Directive 2002/58/EC (as updated by Directive 2009/136/EC) and the Privacy and Electronic Communications Regulations 2003 (SI 2003 No. 2426) as amended; any other European Union legislation relating to personal data and all other legislation and regulatory requirements in force from time to time which apply to a party relating to the use of Personal Data (including, without limitation, the privacy of electronic communications).
‘Intellectual Property’	shall mean intellectual property of any description including but not limited to all inventions, designs, information, specifications, formulae, improvements, discoveries, know-how, data, processes, methods, techniques and the intellectual property rights therein, including but not limited to, patents, copyrights, database rights, design rights

(registered and unregistered), trade marks, trade names and service marks, applications for any of the above.

'Project Period' shall be from 1st October 2021 to 30th September 2024.

In this Contract, references to Clauses and Schedules refer to clauses and schedules of this Contract; and the singular form of any word includes the plural, and vice versa, as required by the context.

THE PARTIES HEREBY AGREE

2. THE PROJECT

- 2.1 The Parties will each use their reasonable endeavours to collaborate on the Project as described in Schedule 1 of this Contract including any modifications, deletions or expansions approved in writing by all Parties.
- 2.2 The Project shall be performed by or under the direction and supervision of the Consultants.
- 2.3 In respect of the Allocated Work, each Party will use its reasonable endeavours to provide adequate facilities: to obtain any requisite materials, equipment and personnel; and to carry out the work diligently within the scope according to Schedule 1. Although each Party will use its reasonable endeavours to perform the Project, no Party undertakes that work carried out under or pursuant to this Contract will lead to any particular result, nor is the success of such work guaranteed. For the avoidance of doubt, nothing in this clause purports to permit any Party to reverse engineer or otherwise analyse any of the materials provided to it under this Contract except in accordance with the provisions of this Contract and to the extent applicable by law.

3. PAYMENT

- 3.1 The Funding Body has undertaken to provide funding for the Project pursuant to Schedule 2 of this Contract. Consultant 1 shall act as recipient of the funding for Consultant 2. The sole financial obligation of Consultant 1 under this Contract shall be to forward the payments allocated to Consultant 2, in accordance with Schedule 2 of this Agreement.
- 3.2 In the event that the Funding Body requires the reimbursement by Consultant 1 of any sums paid under this Contract, then to the extent that such requirement arises from the acts or omissions of Consultant 2, Consultant 2 hereby agrees to reimburse Consultant 1 the sum received by Consultant 2 together with any interest charged thereon, if applicable.

4. PUBLICATION AND CONFIDENTIALITY PROCEDURES

- 4.1 Subject to Clauses 4.4 and 4.5, each Party will use all reasonable endeavours not to disclose to any third party any Confidential Information nor use for any purpose except as expressly permitted by this Contract, any of another Party's Confidential Information.
- 4.2 No Party shall incur any obligation under clause 4.1 with respect to information which:
- 4.2.1 is known to the receiving Party before the start of the Project Period, and not impressed already with any obligation of confidentiality to the disclosing Party; or
 - 4.2.2 is or becomes publicly known without the fault of the receiving Party; or
 - 4.2.3 is obtained by the receiving Party from a third party in circumstances where the receiving Party has no reason to believe that there has been a breach of an obligation of confidentiality owed to the disclosing Party; or
 - 4.2.4 is independently developed by the receiving Party; or
 - 4.2.5 is approved for release in writing by an authorised representative of the disclosing Party; or
 - 4.2.6 the receiving Party is specifically required to disclose in order to fulfil an order of any Court of competent jurisdiction provided that, in the case of a disclosure under the Freedom of Information Act 2000, none of the exemptions in that Act applies to the Confidential Information.
- 4.3 Where a Party (the "Requesting Party") is subject to the requirements under the Environmental Information Regulations 2004 (as amended from time to time) "EIR" and the UK Freedom of Information Act 2000 (as amended from time to time) "FOIA", each of the other Parties shall assist and cooperate with the Requesting Party to enable the Requesting Party to comply with any such information disclosure requirements.

Where the Requesting Party receives a request to disclose any information that, under this Agreement, is another Party's Confidential Information, it will notify that Party and will consult with that Party. That party shall respond to the Requesting Party within [5] working days after receiving the notice of the request. In the event that the Party fails to respond within the requisite period, the Requesting Party reserves the right to disclose any such information it deems appropriate.

The Requesting Party shall be responsible for determining at its absolute discretion whether the information is:-

- exempt from disclosure in accordance with the EIR and FOIA;
- to be disclosed in response to a request for information under the EIR and FOIA and in no event shall the other Party respond directly to a request for information unless expressly authorised to do so by the Requesting Party;

Each Party acknowledges that the Requesting Party may be obliged under the EIR and FOIA to disclose information following consultation with each other and having taken its views into account.

Publications:

- 4.4 4.4.1 This Contract shall not prevent or hinder registered students of any Party from submitting for degrees of that Party theses based on results obtained during the course of work undertaken as part of the Project; or from following that Party's procedures for examinations and for admission to postgraduate degree status.
- 4.4.2 In accordance with normal academic practice, all employees, students, agents or appointees of the Parties (including those who work on the Project) shall be permitted:-
- 4.4.2.1 following the procedures laid down in Clause 4.5, to publish results, jointly where applicable, obtained during the course of work undertaken as part of the Project; and
- 4.4.2.2 in pursuance of the Parties' academic functions, to discuss work undertaken as part of the Project in internal seminars and to give instruction within their organisation on questions related to such work.
- 4.5 Each Party will use all reasonable endeavours to submit material intended for publication to the other Parties in writing not less than thirty (30) days in advance of the submission for publication. The publishing Party may be required to delay submission for publication if in any other Party's opinion such delay is necessary in order for that other Party to seek patent or similar protection for material in respect of which it is entitled to seek protection, or to modify the publication in order to protect Confidential Information. A delay imposed on submission for publication as a result of a requirement made by the other Party shall not last longer than is absolutely necessary to seek the required protection; and therefore shall not exceed three (3) months from the date of receipt of the material by such Party, although the publishing Party will not unreasonably refuse a request from the other Party for additional delay in the event that property rights would otherwise be lost. Notification of the requirement for delay in submission for publication must be received by the publishing Party within thirty (30) days after the receipt of the material by the other Party, failing which the publishing Party shall be free to assume that the other Party has no objection to the proposed publication.
- 4.6 The provisions of Clause 4.1 and 4.2 shall survive for a period of three (3) years from the date of termination of this Contract. The provisions of Clause 4.5 shall survive for a period of one year from the date of termination of this Contract.

5. INTELLECTUAL PROPERTY RIGHTS

- 5.1 For the avoidance of doubt all Background Intellectual Property used in connection with the Project shall remain the property of the Party introducing the same. No Party will make any representation or do any act which may be taken to indicate that it has any right, title or interest in or to the ownership or use of any of the Background Intellectual Property of the other parties except under the terms of this Contract. Each

Party acknowledges and confirms that nothing contained in this Contract shall give it any right, title or interest in or to the Background Intellectual Property of the other Parties save as granted by this Contract. The Parties agree that any improvements or modifications to a Party's Background Intellectual Property arising from the Project which are not severable from that Background Intellectual Property will be deemed to form part of that Party's Background Intellectual Property.

- 5.2 Each Party grants the others a royalty-free, non-exclusive licence for the duration of the Project to use its Background Intellectual Property for the sole purpose of carrying out the Project. No Party may grant any sub-licence over or in respect of the other's Background Intellectual Property.
- 5.3 Each Party shall own the Arising Intellectual Property generated by its employees, students and/or agents under the Project and shall ensure that it secures ownership of such Arising Intellectual Property from its employees, students and agents. The Party owning any Arising Intellectual Property shall be entitled to use and exploit such Arising Intellectual Property as that Party sees fit, and subject always to Clauses 5.5 and 5.6
- 5.4 Each Party shall promptly disclose to the other(s) all Arising Intellectual Property generated by it and each Party shall co-operate, where required, in relation to the preparation and prosecution of patent applications and any other applications relating to Arising Intellectual Property.
- 5.5 Where any Arising Intellectual Property is created or generated by two or more Parties jointly and it is impossible to segregate each Party's intellectual contribution to the creation of the Arising Intellectual Property, the Arising Intellectual Property will be jointly owned by those Parties in equal shares. The owners may take such steps as they may decide from time to time, to register and maintain any protection for that Arising Intellectual Property, including filing and prosecuting patent applications for any Arising Intellectual Property, and taking any action in respect of any alleged or actual infringement of that Arising Intellectual Property. If one or more of the owners does not wish to take any such step or action, the other owner(s) may do so at their expense, and the owner not wishing to take such steps or action will provide, at the expense of the owner making the request, any assistance that is reasonably requested of it.
- 5.6 Any joint owner of any of the Arising Intellectual Property may commercially exploit the Arising Intellectual Property upon consultation and agreement with the other Party/Parties. In such circumstances, the Party which is commercially exploiting the Arising Intellectual Property will pay the other Party/Parties a fair and reasonable royalty rate/revenue on the value of any products or processes commercially exploited by it which incorporate any Arising Intellectual Property taking into consideration the respective financial and technical contributions of the Parties to the development of the Arising Intellectual Property, the expenses incurred in securing intellectual property protection thereof and the costs of its commercial exploitation and the proportionate value of the Arising Intellectual Property in any such product or process.
- 5.7 Each Party is hereby granted an irrevocable, non-transferable, royalty-free right to use all Arising Intellectual Property generated in the course of the Project for academic and research purposes, including research involving projects funded by third parties provided that those parties gain or claim no rights to such Arising Intellectual Property.

- 5.8 If any Party (the "Exercising Party") requires the use of Background Intellectual Property of any other (the "Other Party") in order to exercise its rights in Arising Intellectual Property (whether solely or jointly owned) then, provided the Other Party is free to license the Background Intellectual Property in question, the Other Party will not unreasonably refuse to grant or delay granting a licence to the Exercising Party so that the Exercising Party may use such Background Intellectual Property for the purpose of exercising its rights in Arising Intellectual Property.

6. ASSIGNMENT

No Party will assign this Contract without the prior written consent of the other Parties, such consent not to be unreasonably withheld, denied or delayed.

7. TERMINATION

- 7.1 A Party (the 'Terminating Party') may terminate its involvement in this Contract by giving ninety (90) days prior written notice to the other Parties of its intention to terminate if another Party (the 'Party in Breach') commits a material breach of the terms of this Contract, or is persistently in breach of this Contract in such a manner that the Terminating Party is hindered in its ability to carry out its obligations in the Project. The notice shall include a detailed statement describing the breach. If the breach is capable of being remedied and is remedied within the ninety (90) day notice period, then the termination shall not take effect. If the breach is of a nature such that it can be fully remedied but not within the ninety (90) day notice period, then termination shall also not be effective if the Party involved begins to remedy the breach within that period, and then continues diligently to remedy the breach until it is remedied fully. If the breach is incapable of remedy, or a persistent breach, then the termination shall take effect at the end of the ninety (90) day notice period in any event.
- 7.2 All rights acquired by the Terminating Party to Background Intellectual Property and Arising Intellectual Property of the other Parties shall cease immediately other than in respect of the Terminating Party's interest in any jointly owned Intellectual Property: the Terminating Party.
- 7.3 The expiration of the Project Period, or the termination of this Contract under Clauses 7.1, shall cause the termination with effect from the date of expiry or termination of the obligations imposed on the Parties under Clause 2.
- 7.4 In the event that any Party shall commit any material breach of or default in any terms or conditions of this Contract, the non-defaulting Parties may by unanimous vote decide to instruct the Funding Body to serve written notice of such breach on the defaulting Party and in the event that such Party fails to remedy such breach within ninety (90) days after receipt of such written notice (where such breach is remediable) the Parties may collectively, at their option and in addition to any other remedies which they may have at law or in equity, and with the approval of the Funding Body, remove the defaulting Party and continue with the Contract or terminate this Contract. Any removal of the defaulting Party shall be effective as of the date of the receipt of such notice, in respect of a breach incapable of remedy, and, otherwise at the end of the 90 day period referred to above.

- 7.5 If any Party (a) passes a resolution for its winding-up; or if (b) a court of competent jurisdiction makes an order for that Party's winding-up or dissolution; or makes an administration order in relation to that Party; or if any Party (c) appoints a receiver over, or an encumbrancer takes possession of or sells an asset of, that Party; or (d) makes an arrangement or composition with its creditors generally; or (e) makes an application to a court of competent jurisdiction for protection from its creditors generally; the remaining Parties shall meet to either suspend or terminate that Party's involvement in the Project.
- 7.6 In the event that it is agreed by all the Parties that there are no longer valid reasons for continuing with the Project the Parties may decide by unanimous vote to terminate this Contract. In the event of such termination each Party shall be reimbursed for all costs and non-cancellable commitments properly charged in accordance with this Contract and incurred or committed up to the date of termination, providing that such funds have been or are able to be recovered from the Funding Body. For the avoidance of doubt, no Party shall be required to contribute to any losses suffered by another Party in circumstances where costs have not been recovered from the Funding Body.

8. LIMITATION OF LIABILITY

- 8.1 No Party makes any representation or warranty that advice or information given by any of its employees, students, agents or appointees who work on the Project, or the content or use of any materials, works or information provided in connection with the Project, will not constitute or result in infringement of third-party rights.
- 8.2 No Party accepts any responsibility for any use which may be made of any work carried out under or pursuant to this Contract, or of the results of the Project, nor for any reliance which may be placed on such work or results, nor for advice or information given in connection with them.
- 8.3 The Parties undertake to make no claim in connection with this Contract or its subject matter against any employees, students, agents or appointees of the other Parties (apart from claims based on fraud or wilful misconduct). This undertaking is intended to give protection to individual researchers: it does not prejudice any right which a Party might have to claim against any other Party.
- 8.4 The liability of any Party for any breach of this Contract, or arising in any other way out of the subject-matter of this Contract, will not extend to loss of business or profit, or to any indirect or consequential damages or losses.
- 8.5 Nothing in this Contract limits or excludes either Party's liability for:
- 8.5.1 death or personal injury resulting from negligence; or
 - 8.5.2 any fraud or for any sort of other liability which, by law, cannot be limited or excluded; or
 - 8.5.3 any breach of the European General Data Protection Regulation (and any other laws and regulations relating to the processing of personal data and privacy which apply to a Party).

8.6 8.6.1 Each Party shall throughout the duration of the Project effect and maintain with a reputable insurance company a policy or policies of insurance providing an adequate level of cover in respect of all risks which may be incurred by a Party arising out of a Party's performance of this Contract.

8.6.2 A Party shall produce on demand to the other Party or Parties evidence that any insurance policies required by condition 8.6.1 are in force.

8.6.3 The terms or the amount of cover of any insurance shall not relieve each Party of any of their own liabilities under the Contract. It shall be the responsibility of each Party to determine the amount of insurance that will be adequate to enable the Party to satisfy any liability.

8.7 In any event, subject to clauses 8.4 and 8.5, the maximum liability of either of the Consultant 1 or Consultant 2 under or otherwise in connection with this Contract or its subject matter shall not exceed the amount of monies it has received according to Schedule 2.

8.8 If any sub-clause of this Clause 8 is held to be invalid or unenforceable under any applicable statute or rule of law then it shall be deemed to be omitted, and if as a result any Party becomes liable for loss or damage which would otherwise have been excluded then such liability shall be subject to the remaining sub-clauses of this Clause 8.

9. NOTICES

The **Funding Body's** representative for the purpose of receiving reports and other notices shall until further notice be:

Chairman, Telangana State Council of Higher Education, JNAFU Building, 1st Floor, Mahaveer Marg, opp. Mahaveer Hospital, Masab Tank, Hyderabad, Telangana 500028

The **Consultant 1's** representative for the purpose of receiving reports and other notices shall until further notice be:

For Legal:

Dr Kevin Mundy, Chief Operating Officer and University Secretary, Corporate Services, Bangor University, College Road, Bangor Gwynedd LL57 2DG

For Operational:

Professor Nichola Callow, PVC/Head of College, College of Human Sciences, Bangor University, College Road, Bangor, Gwynedd LL57 2DG,

The **Consultant 2's** representative for the purpose of receiving reports and other notices shall until further notice be:

For Legal:

Chris Heidt, Contracts Manager, Aberystwyth Visualisation Centre, Penglais, Aberystwyth, SY23 3BF

For Operational:

Professor Tim Woods, PVC for Learning Teaching and Student Experience,
Visualisation Centre, Penglais, Aberystwyth, SY23 3BF

The Teaching Institution 1's representative for the purpose of receiving reports and other notices shall until further notice be:

The Registrar, Kakatiya University, NH-563, Vidyananyapuri, Hanamkonda, Warangal, Telangana 506009, INDIA

The Teaching Institution 2's representative for the purpose of receiving reports and other notices shall until further notice be:

The Registrar,Osmania Univeristy, Osmania University Main Road, Amberpet, Hyderabad, Telangana 500007, INDIA

10. FORCE MAJEURE

10.1 A Party shall not be liable for failure to perform its obligations under this Contract, nor be liable to any claim for compensation or damage, nor be deemed to be in breach of this Contract, if such failure arises from an occurrence or circumstances beyond the reasonable control of that Party (including without limitation the coronavirus pandemic but excluding an obligation to make payment). The Parties acknowledge and agree that under the current coronavirus pandemic, there may be unforeseen delays to the provision of the Allocated Work, and arrangements for travel may need to be amended to accommodate any unforeseen events.

10.2 If a Party affected by such an occurrence causes a delay of three (3) months or more, and if such delay may reasonably be anticipated to continue, then the Parties shall discuss whether continuation of the Project is viable, or whether the Project and this Contract should be terminated.

11. UK BRIBERY ACT 2010 (as amended from time to time)

The Parties shall in the performance of the Project:

- 11.1.1 comply with all applicable laws, statutes, directives and/or regulations relating to anti-bribery and anti-corruption including but not limited to the UK Bribery Act 2010;
- 11.1.2 not engage in any activity, practice or conduct which would constitute an offence under the UK Bribery Act 2010;
- 11.1.3 comply with the Consultant 1's Anti-Bribery Policy or have their own equivalent (as amended from time to time), a copy of which is available from the Registrar's Office, including but not limited to implementing 'adequate procedures' in line with the guidance issued by the Secretary of State under section 9 of the UK Bribery Act 2010;
- 11.1.4 promptly report to the Consultant 1 any request or demand which if complied with would amount to a breach of either this Contract or Consultant 1's Anti-Bribery Policy, or equivalent;

- 11.1.5 ensure that any person associated with it who is performing services and/or providing goods in connection with this Contract does so only on the basis of a written contract which imposes on and secures from such person terms equivalent to those imposed on a Party in this clause.
- 11.2 Any breach of this clause shall be deemed a material breach of this Contract entitling the Consultant 1 to terminate it immediately, or the other non-breaching Parties to withdraw from the Project.
- 12. HEALTH & SAFETY** – Each Party is responsible for the health and safety of their own staff, students, consultants, subcontractor or agents, or any other person working on the Project on behalf of a Party. Each Party shall:
- 12.1.1 comply with all legislative Health, Safety and Welfare requirements and industry best practice; and
- 12.1.2 undertake all necessary risk assessments; and
- 12.1.3 warrant that any equipment used in the provision of the Contract is suitable for its purpose, maintained, where necessary has been certified and inspected under relevant statutory obligations, and in a good state of repair.
- 13. LAWS**
- 13.1 The Parties shall comply with all applicable laws and regulations (including but not limited to the General Data Protection Regulation, or equivalent in local laws) and each Party shall indemnify the other Party(s) against any liability for any contravention of such laws or regulations (unless the same is caused solely by the failure of the Indemnified Party to comply with the relevant Party's recommendations or for any claims arising from the Indemnified Parties negligence or deliberate breach of this Contract).
- 13.2 Data Protection Legislation**
- 13.2.1 Each Party shall ensure that it and its contractors and staff engaged in the performance of this Agreement do not cause another Party to breach any DPL and that it complies with those DPL.
- 13.2.2 In the event that a Party processes personal data on behalf of the other Party in connection with this Agreement, the Parties shall immediately enter into a data processing agreement, in a mutually agreeable form and in accordance with the DPL.
- 14. GENERAL**
- 14.1 Clause headings are inserted in this Contract for convenience only, and they shall not be taken into account in the interpretation of this Contract.
- 14.2 Nothing in this Contract shall create, imply or evidence any partnership or joint venture between the Parties or the relationship between them of principal and agent.


- 14.3 No Party shall use the name or any trademark or logo of any other Party or the name of any of its staff or students in any press release or product advertising, or for any other commercial purpose, without the prior written consent of the Party(s).
- 14.4 Except as otherwise expressly provided for herein, the Parties confirm that nothing in this Contract shall confer or purport to confer on any third party any benefit or any right to enforce any term of this Contract for the purposes of the Contracts (Rights of Third Parties) Act 1999.
- 14.5 This Contract and its Schedules (which are incorporated into and made a part of this Contract) constitute the entire agreement between the Parties for the Project and no statements or representations made by any Party have been relied upon by the other in entering into this Contract. Any variation shall be in writing and signed by authorised signatories for each Party.
- 14.6 This Contract shall be governed by the law of England and Wales and the English and Welsh Courts shall have non-exclusive jurisdiction to deal with any dispute which may arise out of or in connection with this Contract.
- 14.7 If any dispute arises out of this Contract the Parties will first attempt to resolve the matter informally through designated senior representatives of each Party to the dispute, who are not otherwise involved with the Project. If the Parties are not able to resolve the dispute informally within a reasonable time not exceeding two (2) months from the date the informal process is requested by notice in writing they will attempt to settle it by mediation in accordance with the Centre for Effective Dispute Resolution (CEDR) Model Mediation Procedure.
- 14.8 If any one or more clauses or sub-clauses of this Contract would result in this Contract being prohibited pursuant to any applicable competition law then it or they shall be deemed to be omitted. The Parties shall uphold the remainder of this Contract, and shall negotiate an amendment which, as far as legally feasible, maintains the economic balance between the Parties.
- 14.9 This Contract may be executed in any number of counterparts, each of which when executed (and delivered) will constitute an original of this Contract, but all counterparts will together constitute the same agreement. No counterpart will be effective until each party has executed at least one counterpart.
- 14.10 Clauses 4, 5, 8, 13 and 14 shall survive termination of this Contract howsoever caused.

EXECUTED as an agreement:

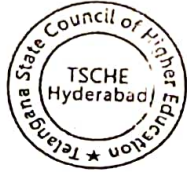
SIGNED for and on behalf of
**TELANGANA STATE COUNCIL OF
HIGHER EDUCATION**

Name: DR. N. Srinivasa Rao

Position: Secretary

Signature: 

Date: 24.09.2021



SIGNED for and on behalf of KAKATIYA UNIVERSITY

Name: Prof. B. Venkatram Reddy

Position: Registrar

Signature: 

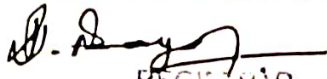
Date: Monday 27 September 2021



SIGNED for and on behalf of OSMANIA
UNIVERSITY

Name: Prof. P. Laxminarayana


Position: REGISTRAR, OSMANIA UNIVERSITY, HYDERABAD-500007.
TELANGANA STATE.

Signature: 
REGISTRAR
Osmania University,
Hyderabad - 500 007.
Telangana State, India

**SIGNED for and on behalf of BANGOR
UNIVERSITY**

Name: Mr Ben Davies

Position: Head of Research Accounts

Signature: 

Date: Oct 7, 2021

**SIGNED for and on behalf of ABERYSTWYTH
UNIVERSITY**

Name: Elizabeth T Treasure

Position: Vice-Chancellor

Signature: Elizabeth T Treasure
Elizabeth T Treasure (Oct 8, 2021 12:50 GMT+1)

Date: Oct 8, 2021

Schedules:

Schedule 1: The Project (including Allocated Work)

Schedule 2: Finance Schedule

Schedule 1: The Project (including Allocated Work)

Embedded in this Agreement and receipt acknowledged by signature of this Agreement

PDF

Telangana curriculum
proposal_final 2021.p

PDF

Recommendations of
TSCHE on Curriculum

SCHEDULE 2 FINANCE SCHEDULE

The total funding amount will be £90,000 (ninety thousand Great British Pounds Sterling) (inclusive of any applicable VAT or any other similar charges) and will be paid by the Funding body to Consultant 1.

Payments will be made on completion of the following deliverables and on submission of an invoice from Consultant 1:

Project stage	Total working time	Anticipated Completion Date	Amount GBP
Diagnosis	50 days	30 th September 2022	£37,500
Design	30 days	30 th September 2023	£22,500
Development & Implementation	15 days +Visit	30 th September 2024	£18,750
Review	15 days	30 th September 2024	£11,250

Invoices should be addressed to: The Secretary, Telangana State Council of Higher Education, JNAFU Building, 1st Floor, Mahaveer Marg, opp. Mahaveer Hospital, Masab Tank, Hyderabad, Telangana 500028 INDIA

Queries relating to finance should be directed to: The Secretary, Telangana State Council of Higher Education, JNAFU Building, 1st Floor, Mahaveer Marg, opp. Mahaveer Hospital, Masab Tank, Hyderabad, Telangana 500028 INDIA

FINANCE SCHEDULE: Telangana and British Council

Payment	Amount in INR	Requirements/Milestones etc	Key timelines
1	27.03.000	Grant disbursement after signing grant agreement	By 30 December 2020
2	9.01,000	Upon receipt of report for contracting of UK partner for scoping study	By 31 March 2021
3	27.03.000	Upon receipt of report for contracting of UK partner for curriculum revision and dissemination workshop	By 30 June 2021
4	13,51,500	Upon receipt of report for completion of capacity building programme / faculty development programme	By 31 March 2022
5	13,51.500	Upon receipt of final project completion report	By 31 December 2022
TOTAL	90,10,000		

Financial Terms for Consultant 2

In accordance with 3.1, Consultant 1 will allocate £16,749 (inclusive of VAT or other similar charges) to Consultant 2 for the duration of the project.

Invoices must be sent electronically to payments@bangor.ac.uk and addressed to:

Research Finance Office
Cae Derwen
Bangor University
College Road
Gwynedd LL57 2DG

Reference Number to Quote: F09823

Consultant 2 shall invoice Consultant 1 on the basis of actual expenditure against the project deliverables listed above in this Schedule 2. Consultant 1 shall pay Consultant 2 within 30 days of said invoice, subject always to the receipt of funds from the Funding Body.

The invoice dates shall be:

- | | |
|--------|--|
| Year 1 | on or around 20 th September 2022 |
| Year 2 | on or around 20 th September 2023 |
| Year 3 | within one (1) month of the end of the Project to allow preparation of the final cost statement by Consultant 1. |

L0113 F009823

Final Audit Report

2021-10-08

Created:	2021-10-05
By:	Anita Thomas (anita.thomas@bangor.ac.uk)
Status:	Signed
Transaction ID:	CBJCHBCAABAAEMI7_tjeoC8crNT9jkzYUK6PEsfhNYuP

"L0113 F009823" History

-  Document created by Anita Thomas (anita.thomas@bangor.ac.uk)
2021-10-05 - 14:09:16 GMT- IP address: 79.73.108.153

-  Document emailed to Ben Davies (r.b.v.davies@bangor.ac.uk) for signature
2021-10-05 - 14:10:16 GMT

-  Document emailed to Christopher Heidt (cah@aber.ac.uk) for approval
2021-10-05 - 14:10:16 GMT

-  Email viewed by Christopher Heidt (cah@aber.ac.uk)
2021-10-05 - 14:18:07 GMT- IP address: 104.47.4.254

-  Email viewed by Ben Davies (r.b.v.davies@bangor.ac.uk)
2021-10-06 - 09:58:17 GMT- IP address: 104.47.1.254

-  Document e-signed by Ben Davies (r.b.v.davies@bangor.ac.uk)
Signature Date: 2021-10-07 - 09:09:52 GMT - Time Source: server- IP address: 147.143.1.77

-  Document approval delegated to Elizabeth T Treasure (ett11@aber.ac.uk) by Christopher Heidt (cah@aber.ac.uk)
2021-10-08 - 11:32:17 GMT- IP address: 144.124.159.35

-  Document emailed to Elizabeth T Treasure (ett11@aber.ac.uk) for approval
2021-10-08 - 11:32:17 GMT

-  Email viewed by Elizabeth T Treasure (ett11@aber.ac.uk)
2021-10-08 - 11:50:18 GMT- IP address: 104.47.5.254

-  Document approved by Elizabeth T Treasure (ett11@aber.ac.uk)
Approval Date: 2021-10-08 - 11:50:59 GMT - Time Source: server- IP address: 144.124.180.194

-  Agreement completed.
2021-10-08 - 11:50:59 GMT

Dr. G. Padmaja
Chairperson, Board of Studies



Department of Physics
Kakatiya University
Warangal – 506 009, Telangana, India

E-mail: gpadmaja06@yahoo.com

Phone: +91 7702227986 (M)

No. 165 / Phy / UC / KU / 2022

Date: 8th Sept., 2022

To
The Registrar
Kakatiya University
Warangal.

Sub: Introduction of Two Certificate courses in dual mode by Physics Department from
2022-23 academic year - Submission of Syllabi – Reg:

Sir,

With reference to the subject cited above I am herewith submitting the syllabi of two certificate courses viz., Certificate Course in Bio-medical Instrumentation and Renewable Energy Resources proposed to offer by Physics Department in Dual mode from 2022-23 academic year onwards.

This may kindly be acknowledged and take necessary action.

Thanking you sir,

Yours faithfully,

G. Padmaja
CHAIRPERSON
BOARD OF STUDIES
DEPARTMENT OF PHYSICS
KAKATIYA UNIVERSITY
WARANGAL-506 009

forwarded

B. Sreenivasulu Reddy
HEAD
DEPARTMENT OF PHYSICS
UNIVERSITY COLLEGE
KAKATIYA UNIVERSITY
WARANGAL-506 009

Forwarded to Registrar
P. M. Reddy
8/9/22
Controller of Examinations
KAKATIYA UNIVERSITY
WARANGAL-506 009

Kakatiya University, Warangal
Faculty of Science
Department of Physics
Certificate Course in Bio-medical Instrumentation
Paper-I: Electro-Physiological measurements

Unit I: Radiation, Transducers and Electro-Physiological measurements (10 Hrs)

Radiation biohazards, Ionizing and non-ionizing radiation hazards, radiation detecting equipment. Transducers: Different types – Piezo-electric, ultrasonic, resistive, capacitive, inductive transducers - Selection criteria. Physiology of heart and lungs, circulation and respiration, ECG, EEG, EMG, ERG and recording methods - Typical waveforms.

Unit II: Non-electrical parameter measurements (10 Hrs)

Measurements of blood pressure, Cardiac output, Cardiac rate, Heart sound, Respiratory rate, Gas volume, Flow rate of CO₂, O₂ in exhaust air, PH of blood, ESR, GSR measurements, Plethysmography.

TEXT BOOKS

1. Bio-Medical Instrumentation and Measurements - Leslie Cromwell, Fred J. Weibell, Erich A. Pfeiffer, 2nd edition, Pearson Edn, 2002 /PHI.
2. Hand Book of Bio-Medical Instrumentation - R. S. Khandpur, Tata McGraw Hill Publishing Co. Ltd., 2003.

REFERENCE BOOKS

1. Bio-Medical Instrumentation - M. Arumugam, Anuradha Agencies, 2003.
2. Principles of Applied Bio-Medical Instrumentation - L. A. Geddes and L. E. Baker, John Wiley & Sons, 1975.
3. Medical Instrumentation - J. Webster, John Wiley & Sons, 1995.
4. Principles of Medical Electronics and Bio-Medical Instrumentation - C. Raja Rao and S. K. Guha, Universities Press (India) Ltd., Orient Longman Ltd., 2000.

E. Padmanabhan
CHAIRPERSON
BOARDS OF STUDIES
DEPARTMENT OF PHYSICS
KAKATIYA UNIVERSITY
WARANGAL-506 009

M. N. Lakshmi
Dean,
Faculty of Science,
Controller of Examinations
KAKATIYA UNIVERSITY
WARANGAL-506 009

S. Sreenivasulu Reddy
HEAD
DEPARTMENT OF PHYSICS
UNIVERSITY COLLEGE
KAKATIYA UNIVERSITY
WARANGAL-506 009

Kakatiya University, Warangal
Faculty of Science
Department of Physics
Certificate Course in Bio-medical Instrumentation
Paper- II: Imaging and Therapeutic Equipment

Unit I: Medical Imaging and PMS (10 Hrs.)

X-ray machine, Radio graphic and fluoroscopic techniques, Computer tomography, MRI, Ultrasonography, Endoscopy, Thermography, Different types of biotelemetry systems and patient monitoring.

Unit II: Assisting and Therapeutic equipment (10 Hrs.)

Pacemakers, Defibrillators, Ventilators, Nerve and muscle stimulators, Diathermy, Heart and Lung machine, Audio meters, - Dializers.

TEXT BOOKS

1. Bio-Medical Instrumentation and Measurements - Leslie Cromwell, Fred J. Weibell, Erich A. Pfeiffer, 2nd edition, Pearson Edn, 2002 /PHI.
2. Hand Book of Bio-Medical Instrumentation - R. S. Khandpur, Tata McGraw Hill Publishing Co. Ltd., 2003.

REFERENCE BOOKS

1. Bio-Medical Instrumentation - M. Arumugam, Anuradha Agencies, 2003.
2. Principles of Applied Bio-Medical Instrumentation - L. A. Geddes and L. E. Baker, John Wiley & Sons, 1975.
3. Medical Instrumentation - J. Webster, John Wiley & Sons, 1995.
4. Principles of Medical Electronics and Bio-Medical Instrumentation - C. Raja Rao and S. K. Guha, Universities Press (India) Ltd., Orient Longman Ltd., 2000.

Dr. Padma
Chairperson
BOARD OF STUDIES
DEPARTMENT OF PHYSICS
KAKATIYA UNIVERSITY
WARANGAL-506 008 (P.S.)

Dr. Sreeni
HEAD
DEPARTMENT OF PHYSICS
UNIVERSITY COLLEGE
KAKATIYA UNIVERSITY
WARANGAL-506 008

Dr. Reddy
8/9/20
Dean, Faculty of Science
Controller of Examinations
KAKATIYA UNIVERSITY
WARANGAL-506 008

Kakatiya University, Warangal
Faculty of Science
Department of Physics
Certificate Course in Renewable Energy Resources
Paper-I: Solar Energy

UNIT I: Principles of Solar Radiation and Collection (Qualitative only) (10 Hrs.)

Non-renewable energy resources – Principles of power generation and transmission. A model of conventional thermal power plant. Advantages and disadvantages of conventional power plants. Role and potential of new and renewable sources, the solar energy option, environmental impact of solar power, physics of the sun, the solar constant, solar radiation on tilted surface, instruments for measuring solar radiation and sun shine, solar radiation data.

UNIT II: Solar Energy Storage and Applications (10 Hrs.)

Solar energy collectors - Flat plate and concentration collectors, classification of concentration collectors and orientation, advanced collectors. Different sensible, latent heat and stratified storage, solar ponds. Solar Applications – solar heating/ cooling technique, solar distillation and drying, photovoltaic energy conversion.

TEXT BOOKS:

1. Non-Conventional Energy Sources - G.D Rai, Khanna Publishers
2. Renewable Energy Resources-Twidell & Wier, CRC Press (Taylor & Francis)

REFERENCE BOOKS:

1. Renewable energy resources - Tiwari and Ghosal, Narosa.
2. Renewable Energy Technologies - Ramesh & Kumar, Narosa
3. Non-Conventional Energy Systems - K Mittal, Wheeler
4. Renewable energy sources and emerging technologies by D.P. Kothari, K.C. Singhal.

E. Padmanabha
Chairperson
BOARDS OF STUDIES
DEPARTMENT OF PHYSICS
KAKATIYA UNIVERSITY
WARANGAL-506 009 (T.S)

M. V. Reddy
2/1/20
Dean, Faculty of Science.
Controller of Examinations
KAKATIYA UNIVERSITY
WARANGAL-506 009

S. Meen
HEAD
DEPARTMENT OF PHYSICS
UNIVERSITY COLLEGE
KAKATIYA UNIVERSITY
WARANGAL-506 009

Kakatiya University, Warangal
Faculty of Science
Department of Physics
Certificate Course in Renewable Energy Resources

Paper-II: Wind, Bio-Mass, Geothermal and Ocean Energy

UNIT I: Wind and Bio-Mass Energy (10 Hrs.)

Resources and potentials, horizontal and vertical axis windmills, performance characteristics. Principles of Bio-Conversion, Energy from waste, types of bio-gas digesters, gas yield, combustion characteristics of bio-gas, utilization for cooking, LPG and CNG.

UNIT II: Geothermal and Ocean Energy (10 Hrs.)

Resources, types of wells, methods of harnessing the energy, potential in India. OTEC, principles of utilization, setting of OTEC plants, thermodynamic cycles. Tidal and wave energy, Potential and conversion techniques, mini-hydel power plants, land and their economics.

TEXT BOOKS:

1. Non-Conventional Energy Sources - G.D Rai, Khanna Publishers
2. Renewable Energy Resources-Twidell & Wier, CRC Press (Taylor & Francis)

REFERENCE BOOKS:

1. Renewable energy resources - Tiwari and Ghosal, Narosa.
2. Renewable Energy Technologies - Ramesh & Kumar, Narosa
3. Non-Conventional Energy Systems - K Mittal, Wheeler
4. Renewable energy sources and emerging technologies by D.P. Kothari, K.C. Singhal.

E. Padmanabhan
Chairperson
ACADES OF STUDIES
DEPARTMENT OF PHYSICS
KAKATIYA UNIVERSITY
WARANGAL-506 009 (P.S)

I.M. Reddy
8/9/22
Dean, Faculty of Science
Controller of Examinations
KAKATIYA UNIVERSITY
WARANGAL-506 009

S. Sreenivasulu Reddy
HEAD
DEPARTMENT OF PHYSICS
UNIVERSITY COLLEGE
KAKATIYA UNIVERSITY
WARANGAL-506 009

Date: 10th Sept 2022

To
The Registrar,
Kakatiya University
Warangal

Sub: Introduction of 4 certificate courses in dual mode by Dept of ECE and CSE from 2022-23 academic year-submission of syllabus-reg

Sir,

With reference to the subject cited I am herewith submitting syllabus of 4 certificate courses viz, certificate course in IOT, Cyber Security. Web Technology, and Research Methodology proposed to offer from department of ECE and CSE in dual mode from 2022-23 academic year onward.

This may kindly be acknowledged and take necessary action

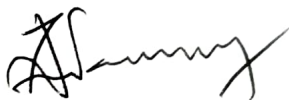
Thanking you sir

Yours faithfully



(Prof. T. Srinivasulu)

Dept of ECE



(Dr. M. Sadanandam)

Dept of CSE

KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPT OF ECE AND CSE

CERTIFICATE COURSE: INTERNET OF THINGS
PAPER=I

Objectives:

1. To understand Smart Objects and IoT Architectures and learn about various IOT-related protocols
2. To build simple IoT Systems using Arduino and Raspberry Pi
3. To understand data analytics, cloud in the context of IoT and to develop IoT infrastructure for popular applications

Outcomes: At the end of this course, students will be able to:

1. Understand the concepts of Internet of Things
2. Analyze basic protocols in wireless sensor network
3. Design IoT applications in different domain
4. Able to analyze design performance
5. Implement basic IoT applications on embedded platform

UNIT - I (10 HRS)

Fundamentals of IoT: Evolution of Internet of Things - Enabling Technologies - IoT Architectures: one M2M, IoT World Forum (IoTWF) and Alternative IoT models - Simplified IoT Architecture and Core IoT Functional Stack -- Fog, Edge and Cloud in IoT - Functional blocks of an IoT ecosystem - Sensors, Actuators, Smart Objects and Connecting Smart Objects.

UNIT - II (10 HRS)

IoT Protocols IoT access technologies: Physical and MAC layers, topology and Security of IEEE 802.15.4, 802.15.4g, 802.15.4e, 1901.2a, 802.11ah and LoRaWAN - Network Layer: IP versions, Constrained Nodes and Constrained Networks - Optimizing IP for IoT: From 6LoWPAN to 6Lo, Routing over Low Power and Lossy



Networks - Application Transport Methods: Supervisory Control and Data Acquisition - Application Layer Protocols: CoAP and MQTT.

UNIT - III (8 HRS)

Design and development design methodology: Embedded computing logic - Microcontroller, System on Chips - IoT system building blocks - Arduino - Board details, IDE programming -Raspberry Pi - Interfaces and Raspberry Pi with Python Programming.

References:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Rob Barton and Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols and Use Cases for Internet of Things", Cisco Press, 2017
2. Vijay Madisetti, Arshdeep Bahga, "Internet of Things: A Hands-On Approach"



KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPT OF ECE AND CSE

CERTIFICATE COURSE: INTERNET OF THINGS
PAPER-II

Objectives:

1. To understand Smart Objects and IoT Architectures and learn about various IOT-related protocols
2. To build simple IoT Systems using Arduino and Raspberry Pi
3. To understand data analytics, cloud in the context of IoT and to develop IoT infrastructure for popular applications

Outcomes: At the end of this course, students will be able to:

1. Understand the concepts of Internet of Things
2. Analyze basic protocols in wireless sensor network
3. Design IoT applications in different domain
4. Able to analyze design performance
5. Implement basic IoT applications on embedded platform

UNIT - I (10 HRS)

Data analytics and supporting services: Structured Vs Unstructured Data and Data in Motion Vs Data in Rest - Role of Machine Learning - No SQL Databases - Hadoop Ecosystem - Apache Kafka, Apache Spark - Edge Streaming Analytics and Network Analytics - Xively Cloud for IoT, Python Web Application Framework - Django - AWS for IoT - System Management with NETCONF-YANG Developing.

UNIT - II (10 HRS)

Case studies/industrial applications: Manufacturing - Converged Plantwide Ethernet Model (CPwE) - Power Utility Industry - GridBlocks Reference Model - Smart and Connected Cities: Layered architecture, Smart Lighting, Smart Parking Architecture and Smart Traffic Control.



References:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Rob Barton and Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols and Use Cases for Internet of Things", Cisco Press, 2017
2. Vijay Madisetti, Arshdeep Bahga, "Internet of Things: A Hands-On Approach"



KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPT OF ECE AND CSE

CERTIFICATE COURSE: CYBER SECURITY
PAPER-I

Course Objectives:

- Learn the various threats in networks and security concepts.
- Apply authentication applications in different networks.
- Understand security services for email.
- Awareness of firewall and IT laws and policies

Course Outcomes:

After Completion of the course Student will be able to:

1. Understand the various network threats.
2. Analyse the forensic tools for evidence collection.
3. Apply the firewalls for threat analysis.

UNIT-I (10 HRS)

Ethical hacking, Attack Vectors, Cyberspace and Criminal Behaviour, Clarification of Terms, Traditional Problems associated with Computer Crimes, Realms of Cyber world, brief history of the internet, contaminants and destruction of data, unauthorized access, computer intrusions, white collar crimes, viruses and malicious code, virus attacks, pornography, software piracy, mail bombs, exploitation, stalking and obscenity in internet, Cyber psychology, Social Engineering.

UNIT-II (8 hrs)

Investigation Tools, e-discovery, EDRM Models, digital evidence collection and preservation, email investigation, email tracking, IP tracking, email recovery, search and seizure of computer systems, password cracking.

Suggested Readings

1. Charles P. Fleeger, "Security in Computing", Prentice Hall, New Delhi, 2009.
2. Behrouz A. Forouzan, "Cryptography & Network Security", Tata McGraw Hill, India, New Delhi, 2009.



3. William Stallings, "Cryptography and Network Security", Prentice Hall, New Delhi, 2006.
4. Charlie Kaufman, Radia Perlman, Mike Speciner, "Network Security: Private Communication in a Public Network", Pearson Education, New Delhi, 2004.
5. Neal Krawetz, "Introduction to Network Security", Thomson Learning, Boston, 2007.
6. Bruce Schneier, "Applied Cryptography", John Wiley & Sons, New York, 2004.

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KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPT OF ECE AND CSE

CERTIFICATE COURSE: CYBER SECURITY
PAPER-II

Course Objectives:

- Learn the various threats in networks and security concepts.
- Apply authentication applications in different networks.
- Understand security services for email.
- Awareness of firewall and IT laws and policies

Course Outcomes:

After Completion of the course Student will be able to:

1. Understand the various network threats.
2. Analyse the forensic tools for evidence collection.
3. Apply the firewalls for threat analysis.

UNIT-I (10 hrs)

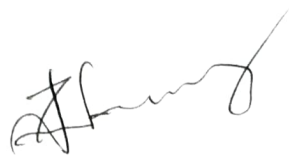
Introduction to Digital forensics, Forensic software and handling, forensic hardware and handling, analysis and advanced tools, forensic technology and practices, Biometrics: face, iris and fingerprint recognition, Audio-video evidence collection, Preservation and Forensic Analysis.

UNIT-II (8 hrs)

Forensic Analysis of OS artifact, Internet Artifacts, File System Artifacts, Registry Artifacts, Application Artifacts, Report Writing, Mobile Forensic-identification, collection and preservation of mobile evidences, social media analysis, data retrieval, Email analysis from mobile phones.

UNIT-III (12 HRS)

Ethics, Policies and IT Act Basics of Law and Technology, Introduction to Indian Laws, Scope and Jurisprudence, Digital Signatures, E Commerce-an Introduction, possible crime scenarios, law coverage, data interchange, mobile communication development, smart card and expert systems Indian Laws, Information Technology Act 2000, Indian Evidence Act, India Technology Amendment Act 2008, Indian



Penal Code , Computer Security Act 1987, National Information Infrastructure Protection Act 1996, Fraud Act 1997, Children Online Protection Act 1998, Computer Fraud and Abuse Act 2001, Intellectual Property, IP Theft, Copyright, Trademark, Privacy and Censorship, Introduction to Cyber Ethics, rights over intellectual property, Corporate IT Policy Formulations, Compliance Auditing.

Suggested Readings

1. Charles P. Fleeger, "Security in Computing", Prentice Hall, New Delhi, 2009.
2. Behrouz A. Forouzan, "Cryptography & Network Security", Tata McGraw Hill, India, New Delhi, 2009.
3. William Stallings, "Cryptography and Network Security", Prentice Hall, New Delhi, 2006.
4. Charlie Kaufman, Radia Perlman, Mike Speciner, "Network Security: Private Communication in a Public Network", Pearson Education, New Delhi, 2004.
5. Neal Krawetz, "Introduction to Network Security", Thomson Learning, Boston, 2007.
6. Bruce Schneier, "Applied Cryptography", John Wiley & Sons, New York, 2004.

A handwritten signature in black ink, appearing to be 'A. Forouzan', is located in the lower right quadrant of the page.

KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY

CERTIFICATE COURSE: RESEARCH METHODOLOGY
PAPER-I

Objectives:

1. To know the motivation on research philosophy and processes in general.
2. To be able to formulate the problem statement and prepare research plan for the problem under investigation through literature.
3. To be able to apply various techniques for data analysis and patenting

Outcomes:

1. Students able to understand research methodology and problems
2. Able to define the techniques involved in defining problem
3. Able to Developing a Research plan and research set up
4. Able to analyze the collection of data and statistical analysis
5. Able to have knowledge on writing the report and patenting

UNIT - I (8 HRS)

Objectives and Types of research: Objectives and Motivation of research- types of research. Research approaches - Significance of Research-Research Methods versus Methodology Research and Scientific method- Importance of research methodology - Research process criteria of good research- Problems encountered by Researchers in India-benefits to society in general.

UNIT - II (10 HRS)

Research formulation: Defining and formulating the research problem, selecting the problem, importance of literature review in define a problem, literature review, primary and secondary sources, reviews, monograms, patents, research data bases web as a source, identifying gap areas from literature review and research data bases, devilment of working hypothesis



References:

1. C.R. Kothari, "Research methodology, Methods & technique", New age international publishers, 2004.
2. R. Ganesan, "Research Methodology for Engineers", MJP Publishers: Chennai, 2011.
3. P. Ramdass and A. Wilson Aruni, "Research and Writing across the disciplines", MJP Publishers, Chennai 2009
4. Matthew Y Ma, "Fundamentals of Patenting and Licensing for Scientists and Engineers" 2nd Edition 2015

A handwritten signature in black ink, appearing to be 'S. Aruni', located in the lower right quadrant of the page.

KAKATIYA UNIVERSITY, WARANGAL
FACULTY OF ENGINEERING AND TECHNOLOGY

CERTIFICATE COURSE: RESEARCH METHODOLOGY
PAPER-II

Objectives:

1. To know the motivation on research philosophy and processes in general.
2. To be able to formulate the problem statement and prepare research plan for the problem under investigation through literature.
3. To be able to apply various techniques for data analysis and patenting

Outcomes:

1. Students able to understand research methodology and problems
2. Able to define the techniques involved in defining problem
3. Able to Developing a Research plan and research set up
4. Able to analyze the collection of data and statistical analysis
5. Able to have knowledge on writing the report and patenting

UNIT - I (10 HRS)

Research Design and methods: Meaning of research design - need of research design- features of a good design- important concepts relating to research design- different research designs Basic Principles of experimental designs- Developing a Research plan-Exploration, descriptions diagnosis and experiment

UNIT - II (10 HRS)

Execution of the research and data collection: Aspect of method validation, observation and collection of data, methods of data collection, sampling methods, data processing and analysis, strategies and tool, data analysis with statistical packages (sigma STAT, SPSS for student test t-test, ANOVA, etc.) hypothesis testing, generalization and interpretation.



UNIT - III (10 HRS)

Reporting and thesis writing: Structure and components of scientific reports, types of report, technical report and thesis. Thesis writing-different steps and software tools (word processing) in the design and preparation of thesis, layout, structure (chapter plan) and language of typical reports, illustrations and tables, bibliography, referencing and footnotes. Use of visual aids. Patenting: The Basics of the Patent System, Patent Law, How to Read a Patent, Protecting Invention and Planning Patent Filing, Preparing Patent Application.

References:

1. C.R. Kothari, "Research methodology, Methods & technique", New age international publishers, 2004.
2. R. Ganesan, "Research Methodology for Engineers", MJP Publishers: Chennai, 2011.
3. P. Ramdass and A. Wilson Aruni, "Research and Writing across the disciplines", MJP Publishers, Chennai 2009
4. Matthew Y Ma, "Fundamentals of Patenting and Licensing for Scientists and Engineers" 2nd Edition 2015

