Gautam Buddha University

EDUCATION ENLIGHTENED

Vision 2020

Contents

Vision

"A globally acclaimed integrated academic and research institution that creates a vibrant community of intellectuals and entrepreneurs endowed with Character, Creativity, Competence and Commitment, who can inspire meaningful transformations to ensure holistic growth and development of the society."

Mission

The Mission of University is expressed though the following goals;

i.   To help to create a community of scholars who can manage continuity and change.
ii. To seek and incorporate the best practices in teaching and learning from around the world.
iii. To inculcate in the learners due appreciation for ethical, ecological and economic issues of knowledge.
iv. To provide knowledge based scientific solutions to satisfy the need of society and industry.
v.   To extend extra support and opportunities to weaker sections of the society to acquire high level competence in diverse fields of immediate relevance.

1.1   About the University:

Gautam Buddha University, established by the Uttar Pradesh Act (9) of 2002, commenced its first academic session at its 511 acres lush green campus at Greater Noida in August 2008. The University is fully funded by the New Okhla Industrial Development Authority (NOIDA) and the Greater Noida Industrial Development Authority (GNIDA), the undertakings of the Government of Uttar Pradesh. The University envisions to become a world class centre for excellence in education with a special focus to serve the under privileged and economically challenged sections of the society. The University is modeled as a fully residential educational campus in line with the best institutions of higher learning across the globe. The uniqueness of its reputation is acknowledged through the format, content and pedagogy of its programmes and their relevance to the society. The University is recognized by the University Grants Commission under UGC Act and is a member of the Association of Indian Universities.

In order to promote value-based education, research and training, the University has established eight schools of learning, which are:

1.   **School of Biotechnology**,
2.   **School of Applied Sciences**
3.   **School of Engineering**
4.   **School of Architecture & Built Environment**
5.   **School of Law, Justice & Governance**
6.   **School of Humanities & Social Sciences**
7.   **School of Information & Communication Technology**, and
8.   **School of Management**

Out of these eight Schools, seven Schools are functional and the **School of Law, Justice, & Governance** shall be functional in the academic year 2012-13. In addition to these eight schools of learning the University has established a **Centre for Buddhist Studies and Research.**

1.2   Centre for Buddhist Studies and Research

The Centre for Buddhist Studies at the Gautam Buddha University is a meaningful mediation for the cause and dedicates itself to the promotion of peace and harmony the very essence of Buddhist ethics and practices in our world torn apart by conflict, hatred and violence. The approach of our programmes is non-sectarian, scholarly and critical, relying on the Buddhist scholarship and its applicability in restoring supermacy of peace, co-existatance, and growth in totality. The research and practices carried out at the centre reinforces respect for the Buddhist tradition and appreciation for its humane values and profound spiritual emancipation. The research and other courses offered at the centre weave together the diverse theories in Buddhism and their expressions in our life, mediating a meaningful inclusion of Buddhist values in our cultural, social and intellectual assumptions. The Centre stands out as an effort to revival of Buddhist ethics and practices which find immense significance in the modern context. The centre encourages comparative studies of Buddhism vis-à-vis other major religions and philosophies of the world with an attempt to understand how the various Buddhist movements across the world helped the societies they emerged in, for instance the Dalit Buddhist Movement in India. It would also facilitate researches aimed at finding ways of resolving national and international conflicts and disputes through the implementation of Buddhist principals. It is worth remembering here that India's foreign policy is guided by the principles of the panchshila, a Buddhist concept that found expression in international politics when it was enunciated by Nehru at the Afro-Asian conference at Indonesia in 1955-56.

Infrastructure and Environment of the Centre

With a very rich library, a grand meditation centre, and a conducive and serene campus, the Centre promises a very productive academic engagement and practice of Buddhist techniques of Vipassana meditation under qualified supervision. In addition to the above, the Centre provides an ideal forum for cross-cultural and international dialogues, with regular sessions with scholars, conventions, symposia, seminars, conferences, lecture series, etc. The Centre is open to academic collaborations, joint research programmes and faculty and student exchange programmes with academic institutions of repute dedicated to Buddhist Studies.

1.3   The Campus

Gautam Buddha University has planned and is developing one of the finest campuses that can rival the best in the world. The University campus is an architectural marvel and has in its master plan, which shall be completed by December 2011:

- A fully residential campus for all Faculty, Staff and Students with world class infrastructure and support facilities,
- Lush green campus spread over 511 acres with 30% green area in which 50,000 trees already planted,
- Total built up campus area 55 lacs sq.fts,

- Bodhisatva Dr. Bim Rao Ambedkar Library with total built up area 1.8 lacs sq.fts. with 2000 seating capacity for library users at a time,
- In its fully functional state 5000 Students shall be receiving global exposure and training,
- Manywar Kanshi Ram Auditorium with 3000 seating capacity,
- An Administrative Building
- Eight School Buildings,
- Mahatma Jyoti Ba Phule Vipassana Dhyaan Kendra,
- Eklavya Sports Complex with Indoor and Outdoor Stadium, Swimming Pool, and Gymnasium,
- Mahamaya Shanti Sarowar, a water body spread over 1lac sqft area,
- Panchsheel Avasiya Parisar for Faculty and Staff Members,
- Separate Transit Hostel for 160 Married Research Scholars,
- Hostel with single occupancy for 5000 Post Graduate Students,
    - Savitri Bai Phule Women's Hostel,
    - Rama Bai Ambedkar Women's Hostel,
    - Shri Chhatrapati Shahuji Maharaj Men's Hostel,
    - Shri Narayan Guru Men's Hostel,
    - Sant Ravi Das Men's Hostel,
    - Other Hostels are under construction,
- An International Convention Centre,
- An International Centre and Guest House,
- Well-furnished University Guest House,
- Shopping Centre and Utility Centres,
- Faculty and Staff Club, and
- Many other support facilities.

All the Schools and the Centres are in synchrony with the essence of our predominant Buddhist Ethics and Practices in the modern context. All these centres of learning encompass modern fields of studies, high-end technological exposure and a meaningful dissemination of knowledge coupled with practicing wisdom.

2.0   Schools of Learning:

Each School of learning in the University combines a multilateral confluence of academic training, research, innovation and creativity. An effort is being made to draw a roadmap for this decade to arrive at another milestone in our quest for academic excellence. The Schools and Centres of Excellence are embodiments of the University's ever-growing quest for excellence in higher education and research. A brief description of these Schools and their future directions is given as under.

2.1   School of Biotechnology

The School of Biotechnology has been established during the academic years, 2009-10. The school aims at strengthening the academic and research programmes in the area and to undertake the sponsored research projects and consultancy from different government and non government agencies working in the discipline. The school further looks forward to develop the research centre for conducting high level research in collaboration with different agencies of national and international repute. At present, with

its *state-of-the-art* laboratories and cutting edge intellectual resources, the School offers three programmes of studies at post graduate level, which are:

a. M.Tech in Biotechnology (a two years programme for Engineering Graduates in Biotechnology)
b. M.Tech in Biotechnology (a three years programme for Science Graduates in Biology as major)
c. Integrated M. Tech. Programme (a five years Dual Degree Programme)

Future Directions

School of Biotechnology aspires to be global leader in biotechnological research and related technologies and undertakes the following mission:

➢ Strengthening academic and research programs
➢ Sponsored research projects and consultancy
➢ National and international collaborative research
➢ In accordance with the vision, the school is looking forward to set the milestones in the discipline through following activities:

Research Excellence

- **Ph.D. program**: Course work as well as training under the supervision of faculty members. Students will undergo extensive training as per international standards.
- **M-Tech dissertations**: Students will have lab training in basic or applied research to prepare them for their next move into either industry or academics.
- **Post-doctoral program**: Post Ph.D. candidates as Faculty Associates and Research Scientists.
- **Sponsored Research projects**: Each faculty member will have at least 2 research projects.

Advanced Instrumentation Facility

- **Computing and simulation facility:** workstations, servers, software's
- **Sequencing facility:** peptide sequencer, DNA sequencer
- **Functional genomics and proteomics facility:** Microarray, Mass spectrometer, 2D gel systems, Analyser, high throughput workstations, plate readers, Phospor imager, Hybridization oven.
- **Microscopy facility:** Confocal, Scanning, Transmission, Electron microscopes
- **Spectroscopy facility:** UV, IR, Fluorescence, FTIR, HPLC, scintillation counter, Auto analyzer.
- **Structure biology facility**: X-ray generator, Imaging plate scanner, Circular dichroism, NMR, SPR, DSC, ITC
- **Cell culture facility**: Incubators, Laminar hoods, Aseptic culture room, Lyophilizer, microfluidimixer, FACS.
- **Stem cell facility:** Biosafety cabinets, CO2 incubators, Upright and inverted Fluorescence
- Microscopes, real time imaging systems, Stem Cell lines: Embryonic and Adult cells
- **Food technology unit**
- **Biosafety Level 2 and 3 Facility**
- **Animal house facility**
- **Green house/plant growth chambers facility**
- **Bioprocess and Product development Facility:** HPLC, GC, Fermenters

Research Collaborations

- **Inter and intra departmental collaborations**: Research Project Collaborations within the school and with faculties in other schools of GBU

- **Global collaborations**: The School shall have collaborations with national and international universities, institutes and industries.

Proposed Initiatives for Research and Development:
- Seed money for each faculty member (5 lacs each faculty)
- Professional development programs for faculty members like post-doctoral and exchange programs
- Set up a common Patent facilitation fund and technology transfer cell at GBU
- To empower the laboratories with facilities for studying structure biology like; X-ray generator, Imaging plate scanner, Circular dichroism, NMR, SPR, DSC, ITC, Cell culture facility like; Incubators, Laminar hoods, Aseptic culture room, Lyophilizer, microfluidimixer, FACS, Stem cell facility including Biosafety cabinets level 2 and 3, CO_2 incubators, Upright and inverted Fluorescence, microscopes, real time imaging systems, Stem Cell lines including Embryonic and Adult cells, Animal /Green house/plant house facility and Food technology unit.
- To foster conduct of workshops, conferences (national & international) and guest lectures on relevant issues, faculty and students exchange programme with national and international universities and institutes. Besides these, the school will also be aiming to own in-house publications to highlight the ongoing research activities and contribution made by the school for further growth of the discipline.

2.2 School of Applied Sciences

The School of Applied Sciences was established in the academic years, 2010-11. The school aims at inculcating and promoting an inquisitive thinking towards science and its applicability in various interdisciplinary subjects amongst young minds of today and tomorrow. The school is committed to provide cutting edge technology and research in partnership with the industries, laboratories and institute of national and international repute. The school provides its services to add essence in the application of science in various disciplines like engineering, technology, computer science and management. At present, the School offers different courses of Applied Mathematics, Applied Physics and Applied Chemistry in School of Engineering, School of ICT, School of Biotechnology and Operations Research in School of Management. The school further aims to initiate Postgraduate and Doctoral degree programmes in these disciplines from the upcoming academic sessions.

Future Directions:
The school will be constantly making efforts to realize the following objectives;

a) The school shall initiate the interdisciplinary research centres in the emerging areas of Nano-sciences and Material Sciences.
b) The school shall be collaborating with leading industrial groups on some joint ventures like development of laboratories, combined research projects and consultancy projects.
c) The school shall also focus on fast emerging fields such as optimization techniques, methods of applied mathematics, robotics, organic semi conductor based devices, solar cell, renewable energy device and other eco-friendly organic devices, polymer synthesis to excel in academic and research area.
d) To initiate postgraduate and doctoral programmes in the above said fast emerging fields, so that our students could carry the required knowledge and skills to address and cater the contemporary needs in the discipline.

2.3   School of Engineering

In accordance with the Vision of the University, School of Engineering has been conceptualized and established in July 2010 with an objective to work out and develop a dependable model for growth, consistency and significant breakthrough in cutting edge technology and innovation in core engineering fields. The rapid diffusion of core engineering fields like Mechanical and Electrical Engineering has the potential of bringing improvement in productivity and efficiency in almost every aspect of our life and consequently turning out to be a key driver of our economic growth. The school is committed to prepare technology leaders for tomorrow with our innovative curriculum and meticulous pedagogy for training. School primarily aimed to excel in research and run post graduation programmes in areas of electrical and mechanical engineering. The School offers following programmes:

a. Integrated M. Tech. Programmes (5 years duration)
   - Electrical Engineering
   - Mechanical Engineering
b. M. Tech. Programmes (2 years duration) for Engineering graduates
   - Power Systems
   - Industrial Engineering & Management
c. Full time Ph.D Programme

Future Directions

a) The school has the vision to initiate the interdisciplinary research in the emerging areas of industrial engineering & management, CAD/CAM, manufacturing technologies, power electronics & drives, automation, instrumentation & control, thermal, energy & power systems, reliability and others.
b) The school has the vision to setup centres of excellence for advance manufacturing technologies, development of materials & their characterization, robotics & control, reliability & testing, energy, Virtual Reality (VR) based Factory of Future.
c) The school focuses on consultancy services by developing laboratories of very high level technologies opening new horizons for the school and the university.
d) The school will be focusing to develop a continuing education centre for imparting new techniques and upcoming technology to working professionals.
e) The school is and will emphasize on broad aspects of fundamental principles, deep understanding of the specialization, and development of creative ability to handle the challenges of mechanical & electrical engineering e and build capacity to adapt and solve problems of inter-disciplinary nature.

Thrust Areas for Research:

- Industrial Engineering & Management.
- Composite Materials Development, Characterization & Finishing
- Non-conventional Machining, Micromachining & Finishing Processes
- Industrial Automation & Control.
- Product Design & Development
- Destructive & Non Destructive Testing
- Wear, Tribology & Coatings

- Smart Materials Development & Characterization
- Nano –fabrication
- VR (Virtual Reality)
- Energy & Thermal systems.
- Power System Deregulation
- Power System Simulation
- Power System Stability
- Power System Operation and Control

- Power System stabilizer
- Power Systems Protection
- Power Quality Measurement
- Energy Economics
- Simulation & Forecasting of future energy demands.
- Use and development of bio-alternative fuels.

Research Activities
- Research based sponsored projects from funding agencies.

Expected Research Outcomes by 2020
1. Publications:

Doctoral Thesis	:	**150**
M Tech dissertation	:	**1450**
Journal research papers	:	**500**
Research Based Books	:	**10**

2. Intellectual Property Rights:

Patents	:	**20**
Designs	:	**20**

3. Funded research projects on core research areas.

Research Projects worth : 500 Lacs

Thrust Areas for Consultancy
Industrial Engineering & Management
- Designing, Project Planning, Monitoring & Control Systems.
- Solving of facility layout problems for manufacturing & service industries.
- Industrial productivity improvement.
- Designing & implementation of supply chain models.
- Quality improvement and six sigma implementation.
- Work Simplification and System Improvement
- Best practices & benchmarking

Design & Manufacturing
- Composite Materials Finishing.
- Calibration & Performance Evaluation of Manufacturing & Measuring Machines.
- CAD/CAM/PLM solutions for automobile, aviation and Tool & Die industry.
- Product Design & Development with rapid prototyping
- Machining of Difficult to Machine Materials.
- Finishing of difficult to finish materials on difficult to finish surfaces.
- Retrofitting industrial facilities by automation.
- Development of VR (Virtual Reality) based modules for hazardous industries.
- Wear, Tribology & Coatings solutions.
- Designing & implementation of manufacturing execution systems.

Material Development & Testing
- Composite Materials Development & Characterization.
- Aviation / Automobile grade material testing
- Non Destructive Testing
- Development & testing of Smart, functionally graded materials & super alloys

Fluid & Thermal Engineering

- Calibration and performance evaluation of fluid machineries.
- Design & Installation of air conditioning systems.
- Design & maintenance of cold storage system.
- Calibration and performance evaluation of R&AC systems.

Power System Engineering

- Power System Deregulation
- Power System Simulation
- Power System Stability
- Power System Operation and Control

- Power System stabilizer
- Power Systems Protection
- Power Quality Measurement

Electrical Engineering

- Analog VLSI design & Testing
- Bio-medical Engineering
- Electric Power Distribution Systems
- Embedded systems
- Energy Systems
- FACT Devices
- Industrial Automation
- Machine Drives and Power Electronics
- Signal Based Fault detection and diagnosis
- Networks and Instrumentation
- Power Electronics and Electrical Drives

Intelligent Techniques

- Neural Networks
- Artificial Intelligence
- Multivariable Systems
- Fault Detection and Diagnosis
- Fault Tolerant Control
- Fuzzy algorithms in Controller design
- Genetic algorithms
- Real Time and Embedded Signal Processing
- Signal Processing Applications to Power System
- Systems and Control

Energy

- Energy Economics
- Simulation & Forecasting of future energy demands.
- Setting up of bio & alternative fuel based plants.

Expected Consultancy Outcomes by 2020
Industrial consultation based on specialized laboratories.
Consultation worth   :   200 Lacs

Establishment of Centre for Excellence

Academic Year	Centre	Activities	Additional Equipment Required

2015-16	Centre for Manufacturing Excellence	• Sponsored project from various funding agencies.
		• PhD's & Post Doc's.
		• Consultancy to Industries & PSU's.
		• Research Publications & IPR
			a) NDT equipments.
			   i) Ultrasonic Testers
			   ii) X-ray Analyzers
			   iii) Magnetic P. Testers
			b) Advance Rheometers.
			c) Condition Monitoring Systems
			d) Machine Vision System.

2015-16	Centre for Reliability and Test	• PhD's & Post Doc's. • Research Projects • Consultancy to Industries & PSU's • IPR	a) Reliability Analyzer b) Environmental Chambers c) Test Chambers
2017-18	Centre for Advanced materials & its characterization.	• Sponsored project from various funding agencies. • PhD's & Post Doc's. • IPR • Research Publications • Consultancy to Defence PSU's.	a) Atomic Force Microscope b) Optical tweezers c) Scanning Electron Microscope, d) XRD setup.
2017-18	Centre for Robotics and Control	• Sponsored project from various funding agencies. • PhD's & Post Doc's. • Consultancy to Industries & PSU's. • Research Publications & IPRs	a) A six degrees of freedom robot manipulator b) seven degrees of freedom Robot Manipulator c) Patrolbot from Active Media d) Silicon Graphics Prism Server
2019-20	Centre for Energy	• Sponsored project from various funding agencies. • PhD's & Post Doc's. • IPR • Research Publications • Consultancy to Power Companies.	a) SIMA & I-O models for energy analysis. b) Fuel Testing equipments. c) 11 KV Prototype Substation Model d) Real time monitoring of Micro Alternator
2019-20	Centre for Virtual Reality (VR) based Factory of Future	• Sponsored project from various funding agencies. • PhD's & Post Doc's. • Consultancy to Industries & Defence PSU's. • Research Publications & IPR's	a) Simulation & VR software's and visualization tools.

Continuing Education
- Conducting Short Term Training Programmes on relevant current research areas for Professionals & Academicians.
- Organizing a biannual National Conference on contemporary areas in collaboration with industries and professional bodies..

- Organizing a biannual International Conference on thrust areas in collaboration with industries, professional bodies at international level.
- Organizing Faculty Development Programmes / summer Schools.
- Conducting certificate courses for specialized technologies.

Collaborations
- Programme specific Academic collaboration with other institutes of higher learning in India.
- Industry-Academia partnership for placements, internships, industrial visits & live projects.
- Collaboration with foreign universities for student exchange, joint research, IPR protection and joint PhD supervision programmes.

Other Academic Activities
- Opening student chapters of professional bodies viz. ASME, SAE, SME, IEEE, IE (I).
- Organizing student technical fests at university / regional / national / international level.
- Conducting Expert Lectures for students from eminent personalities.
- Industrial visits for students.

2.4 School of Architecture & Built Environment

The school of Architecture & Built Environment has been conceptualized during the academic year 2009-2010, which commenced its first batch in July 2010. The school presently has two departments namely Department of Civil Engineering and Department of Architecture & Regional Planning. The mission of the School is to provide a superior, student-centreed learning environment which emphasizes close faculty-student interaction, experimental education, and distinctive research opportunities. It imparts training for students to make them competent, motivated engineers and scientists. Postgraduates will be prepared to excel as professionals, pursue advanced degrees, possess the technical knowledge, critical thinking skills, creativity, and ethical values needed to lead the development of technology for the betterment of sustainable society. With an objective to work out a sustainable model for significant breakthrough in technology and innovation in the areas of Civil Engineering and Architecture & Regional Planning, the School presently offers the following programmes:

a. Five Year Integrated M.Tech. Programme in Civil Engineering
b. Three year extended M.Tech. Programme for science graduates in Environmental Sciences & Engineering
c. Two year M.Tech Programme for engineering graduates in Environmental Engineering and Structural Engineering
d. Two Years Master programme in Urban & Regional Planning
e. Full time Ph.D. programme in all areas of Civil Engineering and Regional Planning.

Future Directions:
a. The school envisions setting up interdisciplinary centre of excellence for research and consultancy in the emerging areas of Civil Engineering like Integrated Water Management, Infrastructural Planning & Development and Disaster Assessment & Mitigation.
b. The school will be focusing to develop a continuing education centre by organizing training programmes for working professionals in specialized areas of civil engineering and regional planning.
c. The school will be focusing on facilitating the research on new challenging areas such as natural resource management, ecology conservation, climate change, Environmental management in

industry, Air quality monitoring and management, structural health monitoring of existing structures, Expert systems and artificial neural network applications in civil engineering, regional planning, Infrastructure & Facility management, Environmental impact assessment, and others.

d. The school will start new post graduate and doctoral programmes in various areas such as Transportation Engg., Construction Management, Urban Infrastructure & Facility Management, Geoinformatics etc.

Research & Development

Main Activities

- Research leading to Doctoral Thesis
- Sponsored Research Projects

Thrust Areas

- Water &Waste Water Recycling
- Infrastructure Rehabilitation
- Composite materials
- Surface and groundwater modeling
- Groundwater contamination and transport modeling
- Integrated water management
- Health Monitoring of structures
- Seismic risk assessment of engineered structures
- Performance based design of buildings
- Displacement based design of structures
- Seismic Retrofitting of Structures
- Soil structure interaction
- Low carbon energy, Climate change adaptation
- Cleaner Production , Energy and Waste Audits
- Design and Assessment for domestic and industrial wastewaters: conventional systems,

fixed film systems, Sequencing Batch Reactor, constructed wetlands

- Low cost treatment systems
- Air quality modeling (plume and concentration prediction)
- Air pollution Control System design
- Environmental Impact Assessment Modules & Environmental Auditing
- Optimum Utilization of Natural Resources
- Parameters for Green Building certification
- Noise Attenuation Modeling
- Experimental and computational studies of the fate and effects of pollutants
- Hydro geochemistry of subsurface environments
- Application of geographic information systems (GIS) to water resource management
- Noise Pollution Monitoring and Analysis
- Building Material Recycling & Reuse

Additional Experimental Facilities to be Setup

S. No.	Name of Research/ Experimental Facility	Year
1	Environmental Monitoring Facility	2012-12
2	Advance GIS & GPS Laboratory	2015-16
3	Advance Environmental Engineering Laboratory	2011-12
4	Quasi -Static Lab	2015-16
6	Strong Floor and Reaction Frames	2015-16
8	Pseudo-Dynamic Testing Facility	2015-16
9	Procurement of Software's Such as SAP, E-Taps, FEM packages, DEM (Distinct Element Method)	2015-16
10	Hazard & Vulnerability Assessment Lab	2015-16

Expected Research Outcomes by 2020
Publications:

Doctoral Thesis	:	150
M Tech dissertation	:	1460
Journal research papers	:	450
Research Based Books	:	10

Intellectual Property Rights:

Patents	:	10
Designs	:	10

Funded research projects on core research areas.

Research Projects worth	:	600 Lacs

Consultancy

School will provide consultancy to Industries and Government agencies in following areas-

A. Urban and Regional Planning
- Urban and town planning
- Planning & design of housing schemes
- Planning and design of residential, commercial and public buildings
- Landscape Architecture
- Project Management Consultancy
- Life Line Building Projects & Management
- Multi Hazard Risk Assessment of Urban Areas
- Disaster assessment, adaptation and mitigation planning

B. Planning and Design of Building & Civil Engineering Infrastructure
- Structural designing of buildings, bridges, industrial buildings etc.
- Planning and selection of alignment for roads, bridges, railway lines and other conveyance facilities like water pipe line sewerage system etc.
- Proof checking structural design and drawings
- Pavement design
- Traffic planning
- Earthquake and seismic analysis
- Soil investigation and foundation design
- Quantity estimation
- DPR preparation for Civil Engineering infrastructure projects
- Material testing

C. Planning and Design of Water and Sanitation Facilities
- Planning and design of water supply and sewerage systems
- Design of water and wastewater treatment facilities
- Design of water and liquid conveyance systems
- Planning and design of storm water drainage systems

D. Water Resources Planning and Development
- Assessment of water resources availability and its optimum use planning
- Watershed planning and development
- Rainfall-runoff studies for different catchments
- Planning and design of water harvesting and groundwater recharge systems

- Irrigation planning
- Designing of groundwater development
- Study of surface and groundwater interaction

E. Environmental Studies
- Environmental impact studies for different infrastructure projects
- Designing of water and waste water treatment options
- Rehabilitation of river and lakes
- Water and wastewater testing
- Air and water pollution studies

F. Topographical and Locational Studies
- Topographical survey
- Traffic survey
- Preparation of GIS data base
- Facility planning in GIS
- Preparation of land use/cover maps

Expected Consultancy Outcomes by 2020
Annual consultancy revenue by the end of year 2020   :   Rs. 700 Lakhs

Establishment of Centres of Excellence

Name of the Centre	Activity	Additional Facilities to be established
Urban Infrastructure Planning & Development *(to be established by 2015-16)*	• Sponsored project from various funding agencies. • PhD's & Post Doc's. • Consultancy to Industries & PSU's. • Research Publications & IPR • Sponsored training programmes • Staff development programmes	• CAD Lab • Thermography Lab with infrared Camera • Software's • Advanced GIS & GPS Lab
Integrated Water Management *(to be established by 2015-16)*		• Advanced GIS & GPS Lab • Environment Monitoring Lab • Stereoscope Workstation • Microbiology Lab • Atomic Absorption • Spectrophotometer (AAS) • Weather Station • Online Data Acquisition System
Disaster Assessment & Mitigation *(to be established by 2015-16)*		• Risk Assessment Lab • Disaster Simulation Lab • Urban Risk RAC 5.0

Continuing Education
- Conducting Short Term Training Programmes on relevant current research areas for Professionals & Academicians.
- Organizing a biannual National Conference on contemporary areas in collaboration with industries and professional bodies.

- Organizing a biannual International Conference on thrust areas in collaboration with industries, professional bodies at international level.
- Organizing Faculty Development Programmes / summer Schools.
- Conducting vocational certificate courses for specialized technologies.

Expected Outcome
- Upgradation in Technical education through faculty development programmes
- Human Resource Development in Technical Areas
- Community education for economically weaker sections

Academic Collaborations
- Programme specific Academic collaboration with other institutes of higher learning in India.
- Industry-Academia partnership for placements, internships, industrial visits & live projects.
- Collaboration with foreign universities for student exchange, joint research, IPR protection and joint PhD supervision programmes.

Other Academic Activities
- Opening student chapters of professional bodies viz. ASCE, ISTE, ITPI, COA, IIA.
- Organizing student technical fests at university / regional / national / international level.
- Conducting Expert Lectures for students from eminent personalities.
- Industrial visits for students.
- Imparting need based trade skills to socially weaker sections.

2.5 School of Law, Justice & Governance

The University is planning to start the School of Law, Justice & Governance in the upcoming academic year 2012-13. The school will start different academic programmes at various levels, such as

a. Five years Integrated Dual Degree Programme in Legal Education (LLB at entry level 10+2).
b. Two years LLM Programme (Entry after LLB)
c. Doctoral Research Programme

The schools also envisions fostering higher level of research, education and training in related and inter disciplinary areas of Law, Justice and Governance.

Thrust Areas for Research:
- Indian Legal Systems vis-à-vis Global Practices
- Human Rights and Constitutional Provisions across the World
- Civil Code and Legal Support
- Constitution Studies
- Courts: Structure, Scope and Practices

Thrust Areas for Consultancy:
- Legal support
- Labour Laws and Practices
- Industrial Disputes
- Corporate Law and New Ventures

Collaborations:

The School shall have extensive collaborations with leading legal agencies across the globe, International Law Firms, Different Law Schools and Universities of repute to accomplish its objective of Law, Justice and Governance.

2.6   School of Humanities & Social Sciences

The School of Humanities and Social Sciences is interdisciplinary in approach. It plays the pivotal role of exposing the students to an environment that is conducive to develop understanding of contemporary social issues through inter-relationship of science, technology and management. The school has a unique and distinctive role of hosting creative educational programme that focuses on creating holistic understanding of complexities of life in social context with emphasis on Indian cultural values and Buddhist ethics. The academic programmes, designed in line with the best universities around the world, combine the best practices of pedagogy and class room teaching, complemented by practical training and experiential learning. The school is equipped with the *avant-garde* facilities for the students and supported by state-of-the-art central library with large collections of books, journals, audio-visual aids and other learning materials. At present, the school comprises of two departments:

a. **Department of Social Sciences**, and
b. **Department of Language, Literature & Culture**.

The School offers multiple courses at different levels in all other Schools for fulfillment of requirement of their respective academic programmes. At present, the School offers the following Programmes:

a. M.A. in Development Studies
b. Full Time as well as Off Campus Doctoral Research Programme in Social Sciences.

Future Directions:

Proposed Academic Programmes of the School to Commence in Different Departments (Existing/to be Created in Future) in Future:

Department of Social Sciences

With the introduction of new courses and creation of new departments, this department will be reorganized to pave way for the new departments. And the existing Post Graduate Programme i.e. M.A. in Development Studies shall be continued in the Department of Economics & Development Studies.

Department of International Relations
The following programmes are proposed to be started in the Department, which are:

   M.A. in International Relations
   a. Duration of the Programme: 2 Years
   b. Admissions Process: Through GPT

   Doctoral Research Programme (Ph.D.)
   Areas of Research

   - Interfaith Studies
   - International relations
   - South Asian Studies
   a. Duration of the Programme: As per the provisions of the Ordinances of the University
   b. Admissions Process: Through GPTR

Department of Social Work

The following programmes are proposed to be started in the Department, which are:

        Master in Social Work (MSW)
            a. Duration of the Programme: 2 Years
            b. Admissions Process: Through GPT

        Integrated Master in Social Work [BSW (Bachelor of Social Work) + MSW (Master in Social Work)]
            c. Duration of the Programme: 5 Years
            d. Admissions Process: Through GPT/GPTU

        Doctoral Research Programme (Ph.D.):

Areas of Research

- Community organization and Development
- Disaster, Disaster management and preparedness
- Gender studies
- Intervention with Alcoholics and Drug Abuse
- Life Skills Education
- Rehabilitation and Resettlement
- Rural Studies
- Social Ecology
- Social Exclusion
- Sociology of Development
- Women/Disabilities and geriatric issues
- Social Policy and Legislation
- Social Work Interventions
- Duration of the Programme: As per the provisions of the Ordinances of the University
- Admissions Process: Through GPTR

Department of Psychology

The following programmes are proposed to be started in the Department, which are:

        M.A. in Applied Psychology
            a. Duration of the Programme: 2 Years
            b. Admissions Process: Through GPT

        Integrated Masters in Applied Psychology [Bachelor degree + Master degree in Applied Psychology]
            a. Duration of the Programme: 5 Years
            b. Admissions Process: Through GPTU

        Doctoral Research Programme (Ph.D.):

Areas of Research

- Educational Psychology
- Behavioral Psychology
- Stress Management
- Individual and Group Counseling
- Psychology at Work Place
- School Mental Health
- Duration of the Programme: As per the provisions of the Ordinances of the University
- Admissions Process: Through GPTR

Department of Education
The following programmes are proposed to be started in the Department, which are:

M.A. in Education
   a. Duration of the Programme: 2 Years
   b. Admissions Process: Through GPT

Integrated M.A. in Education [B.A.+M.A. in Education]
   a. Duration of the Programme: 5 Years
   b. Admissions Process: Through GPTU

Doctoral Research Programme (Ph.D.):
Areas of Research

- Educational psychology
- School Health
- Behaviour Change and Communication
- Education and Technology
- Education and Empowerment
- Motivation and Achievement
   a. Duration of the Programme: As per the provisions of the Ordinances of the University
   b. Admissions Process: Through GPTR

Department of Economics and Development Studies
The following programmes are proposed to be started in the Department, which are:

M.A. in Development Studies
   a. Duration of the Programme: 2 Years
   b. Admissions Process: Through GPT

Master in Business Economics
   a. Duration of the Programme: 2 Years
   b. Admissions Process: Through GPT

Doctoral Research Programme (Ph.D.)
Areas of Research

- Economic Growth
- Global Economic Environment
- Economics and Public Policy
- Demography and Development
- Social Policy and Legislation
- Gender studies
- Social Exclusion
- Social Ecology
- Sociology of Development
- Community organization and Development
   a. Duration of the Programme: As per the provisions of the Ordinances of the University
   b. Admissions Process: Through GPTR

Department of Multimedia Mass Communication

The following programmes are proposed to be started in the Department, which are:

Masters in Mass Communication: The course shall focus on both traditional and new media and capture convergence of the two sets of media tools to measure paradigmatic changes in the media-space. The curriculum shall focus on dissemination of information vis-a-vis its productive effect on public body of knowledge and preparedness of young aspirants to meet multiple challenges in ever-changing communications technologies.

    a.   Duration of the Programme: 2 Years
    b.   Admissions Process: Through GPT

Doctoral Research Programme:
The department plans to start its Doctoral Degree Programme in the areas of:

- Mass Media and Society,
- Role of Media in Social Change
- Advocacy and Media
- Socio-political Discourse and Media
- Cross Cultural Practices and Media

    a.   Duration of the Programme: As per the provisions of the Ordinances of the University
    b.   Admissions Process: Through GPTR

Department of Language, Literature and Culture

This Department has been created in feeding order for the fulfillment of the requirements of other progarmmes offered by different schools. In addition, the mandate under which this department was created clearly expresses the imperative need of going multi-disciplinary in its pedagogy and research. The department aspires to become a center of excellence in research and training with its ambitious expansion plan in phases as proposed and approved under the provisions of the School.

Doctoral Degree Programme
The department plans to start its Doctoral Degree Programme in the areas of:

- Language and Culture,
- Cross Cultural Studies,
- Diaspora Studies,
- Global Management Perspective and Communication,
- Cross Cultural Management in the Globalized context,
- Comparative Literature, Language Politics and Society etc.

    a.   Duration of the Programme: As per the provisions of the Ordinances of the University
    b.   Admissions Process: Through GPTR
    c.   Student Intake: 05

Establishment of a Center for Professional Development and Training

    a.   **The Initiative:** The center with its various refresher courses and training modules intend to help participants of all levels attain their professional and personal goals by providing learning opportunities which are fixable, responsive, and innovative.

    b.   **Mode of Delivery of the Contents:** Need identification shall be done through proper screening of the participants. The methodology will be a judicious blend of workshops, Demonstrations, presentation, Assignments, Class works, Real life situation analysis, Case-study, presentation by students of their Project Work, Exercises, Games, and Simulation.

    c. **Target Group:** Modules will be offered to all students to all student of Gautam Buddha University after proper identification of individual's needs

    d. **Credits and Certification:** After successful completion of each of the modules, the students may be given some credit reward as and when approved by the competent authority. In addition to credits, successful participants will also be given certificates for the modules.

    e. **Proposed Modules:**
- Basic Language Skills Development:
- Nuance of cultural Reflections in Communication
- Managing Self
- Skills for Employability
- Professional Etiquettes and Mannerism in Workplace
- Career Management

Note: **The modules proposed as above may be customized to suit the working professionals in the industry for MDPs. The financial implications may be worked out in line with the guidelines for MDPs, and FDPs as approved by the competent authority.**

Ph.D. Programmes

Ph.D. programme as full-time course and off-campus programme for working professionals will continue with the increase in number of seats as per the availability of the faculty members. In every year based on the availability of the faculty member the seat will be decided and announced for Ph.D. students. Further, based on the formation of other departments, in each department the Ph.D. Programmes shall be introduced.

Departmental (University sponsored) Scholarship for Ph.D. Scholars

It is proposed to have scholarships for three years from the date of the RDC (Research Degree Committee) every year. Two scholarships for each department will be introduced to begin with.

Post Graduate Merit Scholarship

In the post graduate courses two students from each programme will avail the Merit Scholarship every year for two years to begin with. The criteria for the selection of the students will be worked out in details. Hence there will be 10 scholarships for five Post Graduate programme in the beginning.

Laboratory

The laboratory facilities will be developed according to the need of the courses. (Psychology laboratory, Audio-visual laboratory/ Social learning Laboratory; educational laboratory etc).

Outside project

Faculty will initiate efforts to get the grants from other agencies. The collaboration will be established with the national, international organizations, institutes and Universities to work on joint research projects.

Outcome:
1. Ph D research work
2. Post Doctoral research work
3. Post Graduation dissertation
4. Publications in national and international Journals
5. Publication of the research students through the project work
6. Publication of Books on specific topic of research

Consultancy

The faculty members of the department (s) will be open for consultancy work, on various areas that are mentioned in the list above. The constancy services will be provided to the national and international organizations based on the request send by the specific organization. As per the rule the consultancy services will be facilitated for the faculties, this would included the duty leave, consultancy fees, dealing with publication of the reports etc.

Outcome:

1. Resource generation
2. Strengthen the network with other agencies through collaboration.

Establishment of Centers of Excellence

There will be Centers for specific research works and Training.

1. Buddhist Studies.
2. Center for Studies on Social Exclusion and Inclusive Policies
3. Center for Psychosocial Studies and Well Being
4. Center for Diaspora Studies

Academic Year	Centre	Activities	Additional Equipment Required
2012-13	Buddhist Studies	- Research on Buddhism - Interfaith studies - South Asian studies - Relevance in modern era - Organizing lectures, workshops	- Infrastructure - Books and journals - Visiting fellowship from other institutes and Universities
2013-14	Center for Studies in Social Exclusion and Inclusive Policies	- Research on: - Studies on social exclusion - Marginalization in different circumstance - Working on the policy issues - Organizing lectures, workshops - Creating chairs for research work specific topics	- Infrastructure - Books and journals - Visiting fellowship from other institutes and Universities
2013-14	Center for Diaspora Studies	- Research on: - Studies on Diaspora and International Relations - Marginalization in Different Contexts - Working on the Host Governments' Policy Issues - Organizing lectures, workshops - Creating chairs for research work specific topics	- Infrastructure - Books and journals - Visiting fellowship from other institutes and Universities
2014-15	Center for Psychosocial Studies and Well Being	- Research on: - Studies on disaster and psychosocial care/support - Psychosocial aspect of disability - Psychosocial rehabilitation - Well-being and quality of life - Working on the policy issues - Organizing lectures, workshops - Creating chairs for research work specific topics	- Infrastructure - Books and journals - Visiting fellowship from other institutes and Universities

Continuing Education

a. **Seminar/Conferences** will be organized at national and international level. The department (s) would remain active in organizing conferences, seminars and workshops on issues related with social sciences. At least one such event per year will be organized in the Department.

b. **Documentation:** The Department will bring out one annual research Journal.

c. **Refresher Course**: For the faculty members refresher course, summer school will be organized at regular interval. Otherwise, the faculties will be also provided the opportunity to attend the refresher courses organized at various national international institutes/universities.

d. **Faculty Exchange Programme:** Based on the collaboration with national international institutes faculty exchange programme will be developed.

Collaboration

a. **Collaboration with National and International Organizations:** Collaboration will be established with various Government and Non-Government Organizations.

b. **Collaboration with Institutes/Universities:** The collaboration will be established with the national and international level Institutions/ Universities for Faculty and Student Exchange Programme; collaborative research studies/projects on the issues of common interests.

c. **Invited Lectures:** The eminent faculty from across the discipline (National/International) will be invited to give certain number of lectures on specific topics over a period of one to three months on lodging facilities and honorarium.

d. **Visiting Fellowships for eminent foreign scholars for a semester:** Scholars will be invited to work on research project and provide intellectual documents for use in specific discipline. The visiting fellow will be involved in giving some lecture, conduct specific workshops, work research project etc. The emphasis will be to bring the regional and global perspective on the social issues.

e. **Community based activities:** Community based activities will be initiated in the surrounding villages on various social issues by using different awareness generation campaign, health campaign. Appropriate IEC (Information Education and Communication) materials will be developed and used following BCC (Behaviour Change Communication) strategies.

Other Activities

- Encouraging the students to take part on the conference/workshops organized in other institute of repute.
- Facilitating summer placement and job placement through collaboration with organizations/institutes.
- Conducting Expert Lectures for students from eminent personalities un various issues of concern and development.
- Organizational visits for students.
- Creating other youth bodies like, Youth Red Cross, collaborative work with NYK (Nehru Yuva Kendra) on social aspects.

2.7   School of Information & Communication Technology

The School of Information and Communication Technology (ICT) was established during academic year 2009-10. Since its inception, the School has been progressing towards excellence in the field of technical education and research. The school aims to produce competent professionals having strong sense of social responsibilities and become a hub of research and development activities of international recognition.

The School of ICT established in the year 2009-10 presently offers the following academic programmes:

1. 3-Year M. Tech. Programme for Science Graduates
2. 2-Year M.Tech. Programme for Engineering Graduates

   At M.Tech. level following specializations are presently offered:

   (i) Software Engineering   (ii) Intelligent Systems
   (ii) Wireless Communication and Networks   (iv) VLSI Design

3. 5-Year Dual Degree B.Tech.+ M.Tech./M.B.A. programme

   Major streams   (a) Electronics and Communication Engineering
                   (b) Computer Science and Engineering

4. Ph.D. programme in frontier areas of ICT

Future Directions:

The School will be aiming to encourage following activities in its different departments:

a) Upgradation of academic programmes through regular revision & evaluation of the course curriculum in synchrony with current needs of the industry and developing the laboratories equipped with modern and advanced technologies.
b) Using advanced teaching aids in instructional and study materials and initiating the scholarship/fellowship programmes for full time Ph.D. research scholars.
c) Promoting research activities in frontier areas of ICT like wireless communication, e-learning & open resources by the establishment of the Centres of Excellence.
d) Undertaking the sponsored research and consultancy projects from government and private sectors in respective areas and promoting the faculty and student exchange programme for their wide exposure.

Objectives

1. To upgrade the quality of academic programmes through the following strategies:
   (i)   Regular updating/revision of the course curriculum in sync with needs of the industry
   (ii) Development /Modernization /strengthening of the laboratories
   (iii) Use of teaching aids in instruction delivery
   (iv) Sponsoring the faculty for faculty development programmes/summer/winter schools

2. To promote research in frontier areas of ICT
   (i)   Establishment of the Centers of Excellence in the following areas
       (a) Centre for research in wireless communication
       (b) Centre for research in e-learning and open resources
   (ii) Scholarship/fellowship programmes for full time Ph.D. research scholars
   (iii) Sponsored R & D projects from Government organizations and private industries
   (iv) To undertake consultancy projects in the area of ICT

3. Flexible study programme (Week-end programme)
4. To promote Industry-Institute interaction/collaboration
5. Collaboration with foreign and Indian Universities/Institutions of repute

Development/strengthening of laboratories

Sr. No.	Name of the laboratories	A.S. 2011-12	A.S. 2012-13	A.S. 2013-14	A.S. 2014-15	A.S. 2015-16
1.	Mobile Computing Lab, Computer Networking Lab, Communication Lab, DSP & Simulation Lab, Microwave Lab	50.00	40.00	30.00	20.00	20.00
2.	Electronics lab, Electronic Design Lab, Microprocessor Lab VLSI Design Lab	50.00	30.00	20.00	20.00	20.00
3.	Computer Programming Lab, Software Engg/Testing Lab, Operating Systems Lab, AI Lab	50.00	40.00	20.00	20.00	20.00
4.	Multimedia Lab	30.00	20.00	10.00	05.00	05.00
5.	Educational Technology Lab	20.00	10.00	05.00	05.00	05.00
6.	Research and Projects Lab	20.00	10.00	05.00	05.00	05.00

Innovations in teaching methodology & Self-Learning initiatives

Sr. No.	Name of the activity	A.S. 2011-12 Rs. in Lacs	A.S. 2012-13 Rs. in Lacs	A.S. 2013-14 Rs. in Lacs	A.S. 2014-15 Rs. in Lacs	A.S. 2015-16 Rs. in Lacs
1.	Digital depository	2.00	3.00	3.00	3.00	3.00
2.	Virtual class room	5.00	4.00	3.00	2.00	2.00
3.	Departmental Library	5.00	5.00	4.00	4.00	3.00

Establishment of the Centers of Excellence in the following areas

Sr. No.	Name of the laboratory	A.S. 2011-12 Rs.in Lacs	A.S. 2012-13 Rs. in Lacs	A.S. 2013-14 Rs. in Lacs	A.S. 2014-15 Rs.in Lacs	A.S. 2015-16 Rs.in Lacs
1.	a. Centre for research in e-Learning	50.00	20.00	20.00	10.00	10.00
	b. Centre for research in Wireless Communication	50.00	20.00	20.00	10.00	10.00
	c. Open Source Software Development Centre	50.00	20.00	20.00	10.00	10.00

- To undertake R & D and consultancy projects from DRDO, CSIR, DST, UGC and other government and private funding agencies in thrust areas of ICT.
- To propose establishment of the Technology Incubation Centre
- To propose establishment of software development park

Flexible study programme (Week-end Programme)

Name of the activity	Level	Qualifying degree/ Exam.	Proposed annual intake	Proposed Year of commencement
2-Year M.Tech. Programme for Engg.Graduates	PG with specializations in a. Communication Systems b. Software Engineering	B.E./B.Tech. in CSE/ ECE/ IT	15 each	2016-17

To promote Industry-Institute interaction/collaboration

- Establishment of laboratories in joint collaboration with industries like Intel, Cisco, IBM
- Undertaking joint research projects
- Undertaking Joint Ph.D. supervision
- Exploring opportunities for students to undertake live projects from industries
- Training programmes for personnel from IT/ITeS sectors and government organizations in the areas of ICT

- ▪ To establish chapters of professional bodies like IEEE, IETE, ACM

To collaborate with foreign and Indian Universities/Institutions of repute
- To expand the scope of existing MoUs with foreign universities in terms of the following
    - ▪ Faculty and students exchange programme
    - ▪ Joint Degree Programme
    - ▪ Joint Ph.D. supervision

Besides these, the school will be looking forward to establish laboratories in joint collaboration with industries like Intel, Cisco, IBM and other such companies. The school will be initiating the continuing education programme, faculty development programme and management development programme which may help in achieving the objectives of undertaking joint research projects, joint Ph.D. supervision, training programmes for personnel from IT/ITeS sectors and government organizations. The school will be encouraging the establishment of different chapters of professional bodies like IEEE, IETE, ACM, in collaboration with foreign and Indian Universities/Institutions of repute. This may further help in expanding the scope of existing MOUs with foreign universities under the faculty and students exchange programme, joint degree programme and joint supervision for higher level research activities.

2.8   School of Management

The School of Management has been established during the academic year 2008-09, with 120 students in its first batch of MBA. Since then, it has been marching on with an integrated focus on exploring and creating new avenues for young aspirants through strategic collaborations with institutions and enterprises of national and international repute. The school has state of the art classrooms equipped with computing facilities and supported by an extensive library of books, journals, films & databases. The curriculum of all its academic activities has international and cross cultural focus. At present, the school offers three programmes in management:

a. Two years Masters Programme in Business Administration (MBA),
b. Five years dual degree BBA+MBA programme, and
c. Doctoral Programme (PhD).

Future Directions:

a) To operate as an educational and research hub to foster close educational and research interaction through networking with national, regional and international players in the industry as well as academic & research institutions in any part of the world having objectives wholly or partly similar to that of the school.
b) To facilitate the exchange programme for faculty and scholars with leading institution and industries on some joint ventures.
c) To integrate new technology in the classroom to encourage student-centric learning and empowering the school to offer technology-mediated distance learning educational programmes.
d) To foster the creation of new knowledge by the integration of teaching and research at all levels and continuous evaluation of its pedagogy and programmes in a manner that earns both national and international accreditation.

The school further envisions starting Continuing Education Programme, Management Development Programme, Faculty Development Programme, Consultancy and Sponsored Research projects through Industry Interaction Cell (IIC) and International Relations Cell (IRC). The School would be organizing national and international seminars and conferences to provide a platform for germination and exchange of ideas and thoughts on existing and contemporary themes in management.

Emanating from the proposed Vision and Mission of the University outlined in above sections, the academic activities for the School of Management is proposed as under:

- To promote capacity building in competencies through the offering of programmes of education and research of world class quality leading to the award of the master's and doctoral degrees in management thereby leading to the creation of a pool of knowledge workers fitted to work globally;
- Provide customized programmes that serve the current and on-going needs of working professionals for continuing education;
- Foster the creation of new knowledge and its transmission while at the same time, continually enriching its teaching through the inter-mixing and integration of teaching and research at all levels;
- Operate as an educational and research hub to foster close educational and research interaction through networking with national, regional and international players in the industry as well as with education and research institutions in any part of the world having objects wholly or partly similar to that of the School for exchange of faculty and scholars, conducting of joint research and undertaking of sponsored research and consultancy projects with a view to collectively expand expertise and excellence in the country;
- Integrate new technology in the classroom to encourage student-centric learning strategies and the development of a thirst for life-long learning as well as to increase the reach of the School through the offering of technology-mediated distance learning educational programmes;
- Manage the content, quality, design and continuous evaluation of its academic and research programmes in a manner that earns both national and international accreditation.

Strategic Implementation
'Brilliant ideas can be killed if not executed well.' The key to success of the School would lie in implementation of the activities matched with appropriate resource planning and monitoring and review of objectives and targets. The following sections detail these aspects.

Proposed Activities
The implementation activities have been spread out in 3 phases over ten years from date. The details of the activities are illustrated in Table 1. The activities may be grouped as **Academic (Teaching), Research, Industry & International linkages and Extension.**

Academic (Teaching) activity would include instructional educational programs run through a mix of conventional and contemporary modes integrating and intermixing research and industry real time experiences.

Research and Development activities would include generation and development of new ideas and knowledge in the management discipline involving faculty and students of the University and beyond that also in form of publications in national and international refereed journals, course material development etc. Applied and action research may be considered as boundary spanners falling in research and extension services.
The School would organize National and International Seminars and Conferences to provide a platform for germination and exchange of ideas and thoughts on existing and contemporary themes in management.
To foster research activities and creation and dissemination of knowledge the School would establish dedicated research centers like;
- Center for Innovation and Entrepreneurship Development (CIED);
- Center for Case Method Research and Learning (CCMRL)and
- Center for Leadership and Team Building (CLTB)

Management Development Programmes

The School of Management will launch Management Development Programmes (MDPs) with the objective to help improve management systems in organizations by taking classroom to the field for providing relevant education and training to executives of all levels in the industry, government and non-government sectors and in return further enhancing learning and knowledge building to be taken to the classrooms. The MDPs may be even customized to the meet the need of the organization in consideration.

Consultancy and Sponsored Research

The faculty in the School will be encouraged to undertake consultancy and industrial sponsored research work, involving the students of the School. These activities shall motivate students to not only be involved in experiential learning but allow them to work on the real problems of the industry, stakeholders of the institutions/ organizations. The School would make efforts to seek assistance and partnerships with National Associations and Government sectors, International associations/ collaborations and private sector for the purposes of joint collaborative / sponsored research and funding. The Schools will also work in partnership with the industry to dedicate 'Chairs' in specialized areas of management education and research.

Faculty Development Programmes

The thought, 'Once a teacher always a teacher' may give the impression that the all learning and knowledge building is for the other side of the class, whosoever it be. However, as generally agreed in today's date that Faculty who are the employees of an educational institution also training and development for future growth. The School shall launch Faculty Development programs to cater to the faculty of management schools across the country.

Industry Interaction Cell (IIC): An Industry interaction cell is proposed within the School that would serve as a nodal agency to assist the School and would be responsible for managing corporate relations and interactions for the following purposes;

- Placements
- Identification of employable skills in the industry that would help in designing and modifying the courses and programs as per Industry demand
- Identification of training needs in the industry for designing customized training and Management Development programs for industry
- Organizing seminars and conferences in association with the industry
- Arranging and Inviting industry participation for Guest Faculty, Expert, Examiner, Course Material and Program Design

International Relations Cell (IRC): An International Relations cell is also proposed within the School that would be responsible for managing all international relations related with Student and Faculty exchange. The international relations cell will strive to build tie-ups with premier international B-Schools for felicitating student and faculty exchange and will collaborate on behalf of SOM for joint research and other sponsored activities such as market surveys, analysis and forecasts required by international business houses intending to expand in the Indian Markets.

Extension services would cover all areas and activities which take the management education to society including education and training programmes for contribution to overall development of the society including programs designed for carrying out CSR activities for organizations. Extension would include developing short term programmes helping small businesses, retailers and self-employed people develop operational efficiency through managerial interventions.

Phase	Activities
I (3 years)- Inception Phase Focus: Academic (Teaching) and Research	i. Educational Programmes in Management; • MBA (2 years) • Integrated MBA (BBM+MBA 5 years) • MBA for Working Professionals (15 months) • MBA (Part-time) • PhD for working Professionals (2 years) • PhD Full time (3 years) ii. Starting Continuing Education Programmes for practicing managers and faculty (MDPs/PDPs/FDPs) iii. Organizing National and International Seminars and Conferences iv. Collaborating with renowned B-Schools/Universities for student & faculty exchange, joint research and content development etc. v. Preparing the ground work for second phase activities
II (5 years)- Development Phase Focus: Teaching, Research and Industry linked activities	i. Educational Programmes in Management and other activities as above ii. Starting new specialized Post graduate degree programmes in phases. iii. Entering into strategic alliances with industry and other institutions for the purposes of; • getting sponsored research and consultancy projects, • funding • engaging in student and faculty exchange • post doctoral research iv. Bringing out an International Journal in Management v. Opening up of Research and Incubation centers vi. Identifying the need for educational programmes in Management at global level and matched to specific industry /sector requirement
III (2 years)- Consolidation Phase Focus: Teaching, Research and Industry linked activities Research and Extension	i. Educational Programmes as initiated, introduced and modified in phase 1 and 2, with introduction of new programmes as per the need and other activities pursued ii. Partnering with Industries to set-up dedicated "Chairs" in specialized areas of management education and research iii. This phase would be a critical phase that would require picking up the threads for most of the activities initiated and bringing in an integrated view for the School as a whole with appropriate resource re-planning to let not all the efforts go astray. The objective would be to establish ourselves as one amongst the top B-Schools across the globe.

Alumni Relationship:

Nurturing of alumni relationships is a crucial element in an educational Institution's quest for excellence. Alumni serve as the brand ambassadors of the Institute in the outside world; they are a source that can be fruitfully tapped for resource mobilization; they can provide "real world" professional experience to present students through a mentorship programme; they can provide feedback to modernize the academic curriculum; and above all by staying connected they can serve as agents to enable the Institution to strengthen its core values and competencies and to move forward with speed and agility to a position of leadership in the higher education market place in the domain of its core competency.

To enable all this to happen it is necessary that a strong ALUMNI ASSOCIATION be in place and that all graduates enroll as members. The new and existing students may mandatorily pay the Alumini Association fees. A membership drive shall be launched to enroll past graduates as members. The first step in this regard is to create a database of addresses of past graduates. Such a database would need to be continuously updated. Organization of special events in places of concentration of alumni may be used as a possible avenue to generate such a database.

3.0 Support Facilities

3.1   Boddhisatva Dr. B. R. Ambedkar Library

Boddhisatva Dr. B. R. Ambedkar Library is the soul of academic and research activities of the Gautam Buddha University. The library is fully automated and functional with the RFID system in place. It has been catering to the needs of faculty members, research scholars, and students on campus effectively. It has huge volumes of books and e-journals which cover the disciplines of Management, Computer Science, Information Technology, Biotechnology, Humanities & Social Sciences, and other related areas. The library is well equipped with modern facilities, spacious stack halls, 2000 seating capacity reading hall, reference sections, catalogue area, and multiple loaning counters. The library aims to "provide high quality services in support of the teaching and research objectives of the University communities".

Access to information is essential to the academic life of the University Library. The University Library is home to a number of unique collections and our role in acquiring, managing and providing scholarly access to many of these collections. The library system at Gautam Buddha University provides comprehensive access to printed reading materials for teaching, learning and research at the same time there is a growing trend towards electronic/digital information provision that the University Library should be responsible for providing content, books, e-Books, electronic Journals, multimedia, lecture notes, compact disk, audio video, project reports, maps, globe, encyclopedia, dictionary and interactive learning programmes, etc. to include procuring content from external sources, digitizing local content, and promoting the generation of new content within Gautam Buddha University.

Future Directions of the Library:

➢ To collaborate and form partnerships with other leading National and International Universities that will enhance the quality of services offered and build on the University's reputation.
➢ To increase the teaching use of digital resources created or purchased by us in the University.
➢ To provide responsive and informative reference and enquiry services, offering relevant user education, information and material in the format required by the user, taking into account their individual needs.
➢ To develop digital infrastructure which provides a set of services and systems to support access to, and management of library content and duration of scholarly digital content for the University. During the vision 2020 we will continue to build a wider role in supporting the growing demand from users for accessing library content at any time and from any place in the University.
➢ To implement a user-friendly search and discovery tool for library materials to provide a new-generation interface to the Library catalogues and greater opportunities to develop flawless services for users around it. The Library will work together to exploit the capabilities of systems and the virtual learning and research environment, in support of teaching, learning and research.
➢ To develop an institutional repository service using D-space open source software. This service will help to create digital collection (research paper, project reports, thesis and dissertations) in the library and facilitating as well as reuse of content from a wide variety of sources, their preservation and dissemination, while managing the University's digital archives.

- To develop an audio visual section for non-textual content–images, audio and video are increasingly important to users. The creation, management and use of such content will play an important role in making our collections more widely accessible.
- To develop and implement a digital preservation strategy, to include research data management support.
- To understand the needs of our users is the key principle that allow us to design and deliver services of the highest quality, using the most effective methods. The routine collection and collation of information about our users goes hand in hand with listening to our staff, which has the most extensive experience of how and where the service works best.

Library Collection: (Procurement of Book, e-books, e-journals, Lecture notes)

Gautam Buddha University Library is committed to using its Collections to support student, faculty, researcher, teaching, and developing digital services to make the collections accessible to the widest possible users in new and innovative ways. The collection of the Library will be develop day by day in the area of science, technology, engineering, humanities, social sciences, management, generalia etc. is very strong. We have total updated collection of books, project reports, current journals, back volumes, specifications and CD/DVD databases etc. The collection is heavily used by the faculty, students and scholars.

E-Resources/Database (E-Journals)

Year	No of Database & Resources	No. of E-Journals
2010	1. IEEE (Electronic Library) 5 User 2. ACM Digital Library 3. Springer Journals 4. Emerald Journals 5. EBSCO (Business Source Complete) 6. ECCH (European Case Clearing House) Online Cases for Management 7. DELNET (Developing Library Network) 8. Oxford University Press 9. Nature 10. Centre for Monitoring Indian Economy (CMIE) a) Prowess b) EIS(Economical Intelligence Service)	7000
2011	1. IEEE (Electronic Library) 15 User 2. Blackwell Journals (Wiley Interscience) 3. Science Direct 4. Elsevier Journals 5. SCOPUS	5000
2012	1. AMS (American Mathematical Society) Journals 2. ACS (American Chemical Society) journals	3500

	3. Cambridge University Press Journals	
2013	1. The Royal Society Journals 2. Sage Publication Journals 3. Taylor And Francis 4. ABI Inform Complete 5. Thomas Telford	4500
2014	1. ASCE Journals 2. ASME Journals (+ AMR) 3. ASTM Standards & Digital Library 4. Emerald- 175 Extra 5. Annual Review of Genetics 6. Annual Review of Microbiology 7. Annual Review of Plant Biology	3500
2015	1. MathSciNet* 2. Proquest Science Journals 3. Optical Society of America (Optics info-base) 4. Gale Cengage Learning Business and Company Resource Center 5. Capitaline	4000
2016	1. Engineering Village 2. J-STOR 3. Portland Press 4. Royal Society of Chemistry 5. SciFinder Scholar 6. ASM American Society for Microbiology 7. AustLitt: The Australian Literature Resource 8. BBC Monitoring 9. Cairn.info 10. CEIC Macroeconomic Database (Asia)	3500
2017	1. American Chemical Society 2. American Institute of Physics 3. American Physical Society 4. Annual Reviews 5. Economic & Political Weekly (EPW)	4500
2018	1. Royal Society of Chemistry(6 Databases) 2. Web of Science (Through N-LIST Programme) 3. Institute of Physics 4. MANUPATRA 5. Portland and Press 6. Project Euclid 7. Project Muse 8. SIAM	2500
2019	1. Annual Review of Biochemistry 2. Annual Review of Bio Physics 3. Annual Review of Cell and Developmental Biology	3000

	4. IET Digital Library 5. Inderscience Online Journals 6. India Stat 7. INDLAW 8. ISID 9. JStor	
2020	1. Euro Monitor(GMD) 2. ASCE On-line Journals 3. INSPEC 4. Sci Finder Scholar	4000

Print Journals/Magazines

Year	No of Journals/Magazines
2010	78
2011	120
2012	150
2013	200
2014	225
2015	250
2016	300
2017	250
2018	320
2019	250
2020	300

E-Books

Year	No of Title	No. of E-Books
2010	500	1000
2011	900	2000
2012	1300	2500
2013	1200	2000
2014	1300	2300
2015	1400	2000
2016	1200	2500
2017	1400	3000
2018	1500	2200
2019	1300	2000
2020	1400	2300

Lecture Notes

Year	No. of E-Journals
2010	2000
2011	2500
2012	2000
2013	1500
2014	1500
2015	2000

2016	3000
2017	2000
2018	2500
2019	3000
2020	2000

Book Bank

Library will establish a book bank on the Ground Floor of library for the students of Gautam Buddha University. Library will start book bank facility in upcoming academic session.

Library Media Resource Center

Library will open a Media Resource Center (MRC) on the ground floor of library and will be available for University academic activities to end- users of Gautam Buddha University only. MRC will be air-condition with 100 seating capacity and wireless networking, motorised large screen display, Internet connectivity, a workstation and audio system.

Library Digital Knowledge Center (Digital Library)

Digital Knowledge Center will be available to users in upcoming academic session. Library will install 100 Systems to make it as the Gateway to Academic Excellence in the Digital Age. The mission of the DKC will be provide an effective and efficient information infrastructure to the Library for providing access to the current and relevant, on-line resources, fostering an environment and culture which will conducive to advancing the usage of e-learning resources for enabling stake-holders to contribute in the global society. It also aims to conduct need based Information Literacy Programs for the benefits of the students, faculty, staff and researcher.

Library OPAC/Web OPAC

Presently this facility is very much available on the campus network and globally with the help of Libsys Library Management Software with RFID technology complete security system.

Library Museum

University library will open a museum where things and literature will be available related to the Buddhism and Buddha for the user.

Library Alumni Relationship

The University Library will plan to provide the services to their Alumni free access to online library services in support of their professional development and appreciation for lifelong learning.

Library Services

Library will be adding various value added services to the faculty, students, staff members and research scholars of the Gautam Buddha University.
- Book Bank
- Document Delivery Service
- CAS (Current Awareness Service)
- SDI (Selective Dissemination of Information)

- Scanning/printing/Photocopy service on smart card
- E-delivery service for articles & chapters
- Student Disability Advice Services
- SMS/E-Mail Alert Service
- Referral Service
- Check PC availability
- Find exam papers
- Self Renewal of Books
- Electronic Book Drop
- Access to Abstracts and full text of Publications through (INDEST, INFONET consortium)
- Documentation Service (Translation, Abstracting, Indexing)
- Book Reservation
- Audio/Video Service
- Access to E-Resources (E-Books, Lecture Notes)
- Bibliographical Compilation
- Technical Consultancy
- New Arrival Display Service
- Newspaper Clippings
- Locker Facility Service (Researcher/Faculty Members)
- Tracing Reading Material Service

3.2 Corporate Relations Cell

Continuous interaction with the industry helps students to build strong relationship with the industry professionals. This also helps students to understand the corporate world better and develop themselves as per the needs of the industry. The Corporate Relations Cell (CRC) at GBU intends to be the face of the University to the Corporate/Industry. It aims to facilitate the process of close Industry-University interactions and actively promote new avenues in experiential learning. The CRC endeavors to bridge the gap between academia and corporate world. It engages leaders, entrepreneurs, executives, and policy makers to address students to facilitate practical learning. The CRC also helps students by counseling them to choose appropriate career options depending on their aptitude and interest. The CRC helps students in finding appropriate summer projects and final placements. The CRC involves students strategically for various events, summer and final placements. A good placement is synergically linked with quality education. Conscious of this linkage, the CRC facilitates a purposeful link between the budding technocrats and entrepreneurs and their prospective employers. The centre envisions executing following tasks to achieve the objectives.

- By 2020, the centre would be able to offer job opportunities to our students from across the globe.
- The centre is looking forward to have comprehensive collaborations with corporate sectors for incubation centres, joint research, industry visits, internships & placements.
- To develop world class centre for Management Development Programme to provide short term training to working professionals.

- ➢ To develop the strategic partnership with organizations like CII, AIBA, ISTE, ASSOCHAM, NASSCOM, CEAI and MHRD for organizing national and international seminars /conferences.
- ➢ To develop alumni association at university, that will help in maintaining a strong networking with corporate world.
- ➢ The centre further aims to facilitate the process of close Industry-University interactions and actively promote new avenues in experiential learning. The CRC endeavors to bridge the gap between academia and corporate world.

3.3 International Collaborations

We are carefully crafting our future which ensures qualitative education and training to students. In our quest for achieving intellectual excellence, we are re-drawing the frontiers and spreading our wings in all directions to map the limits of academic excellence. To become a global centre for excellence, we are in the process of formalizing tie ups and mutual accreditations with many universities in UK, France, Finland, Netherlands, Australia, Denmark and USA. To take the initiative of the University further, the government of Uttar Pradesh has introduced special scholarships for students of SC/ST and other economically challenged students across all classes of the society enabling 50% of them to meet their expenses for one semester study at a university abroad for their travel, stay and course fees.

The University is in the process to have tie-ups and mutual accreditations with more than 15 universities in UK, USA, Australia and other major developed European countries. In this regard the University has signed MoUs with the Queensland University of Technology, Brisbane, Australia, the International Business Academy, Kolding Denmark, Manchester Metropolitan University, UK, and Sheffield Hallam University, UK. During the session 2009-10, 50% of the total students of MBA, School of Management from SC/ST category and BPL category went to Denmark to attend Summer School Programme at the **International Business Academy, Kolding, Denmark** for this semester to study "The European Management Perspective". In the current session 2010-2011, 50% of the total students from SC/ST category and BPL category of MBA, School of Management and M.Tech., School of Information and Communication Technology went to Sheffield Hallam University, UK to attend one Semester Abroad Programme.

The IRC shall coordinate all international programmes of the University, such as International Exchange of Academic staffs & Students and cooperation in education and research with foreign institutions/industry, formulation and execution of Memorandum of Understanding (MOU) between the University and institutions abroad. The IRC envisions initiating collaborative research programmes, to create a data base for perspective international programmes in the University, visits of various delegations from abroad and signing of MOU with them.

3.4 Central Computer Centre

The Central Computer Centre (CCC) helps in initiating, controlling and regulating the IT support services at university level. The centre envisions executing following activities to meet its objectives:
- ➢ Development of State-of-art Data Centre.
- ➢ In-house hosting of different IT application & servers.

- ➢ Complete WI-FI coverage in the campus.
- ➢ Internet bandwidth 100 Mbps to each school & 1 GBPS at CCC.
- ➢ Development of higher end video conferencing system.
- ➢ 500 computers with high speed internet connectivity available 24x7 for students
- ➢ Imparting training on latest IT Software & Technology to the Faculty members as well as staff of Gautam Buddha University.
- ➢ Providing consultancy to nearby industries.

3.5 International Convention Centre

The international convention centre of the university, which shall be functional in the next academic session (2012-13), aspires to become a true global platform for intellectual exchanges. The centre is looking forward to host a number of programmes, activities, and engagements. An impeccable infrastructure keeps it ahead of the best available in the class.

3.6 Central Auditorium

Apart from four auditoria in alternative sequence in the eight Schools of learning, the University will be completing the construction of a central auditorium at its campus with the capacity of 3000 seats at a time in the next academic session (2012-13). The *state-of-the-art* auditorium shall be equipped with all kind of advanced audio-video systems. The auditorium will be facilitating the academic as well as extracurricular activities at the University campus.

3.7 International Centre and Guest House

The centrally air conditioned building has state of the art convention centre conference halls, committee rooms, more than 40 suits and a huge central hall. Adjacent to it, there is another International Guest House with 100 well furnished rooms to host scholars, academicians and other dignitaries.

3.8 University Guest House

In addition to International Centre and Guest House, the University Guest House situated adjacent to the building houses 100 well furnished rooms with huge open area and a lush green lawn at the centre of the building.

3.9 Students' Accommodation and Hostel Facilities

The University is a fully residential campus, which has separate hostel accommodations for boys and girls with 5000 single seated hostel rooms and complete wi-fi premises. There are two women's hostels named after Savitri Bai Phule and Rama Bai Ambedkar and three men's hostels named after Shree Chhatrapati Sahuji Maharaj, Shree Narayan Guru and Sant Ravi Das. These hostel complexes have state of the art facilities. Two hostels for girls & three hostels for boys are available for the 2010-2011 batch and one Transit hostel is for Married Research Scholars. These 6 hostels have capacity to accommodate nearly 1200 students.

To enable the students to spend quality time in the University each hostel is equipped with a common room, T.V. Room, Table Tennis Room , Reading Room , Internet Room , Indoor Games Room , Gymnasium , Badminton Courts and Basketball Court. Each room in the hostel is provided with an internet connection. In addition to this each hostel houses a medical room and a visiting room. All the hostels are supported by the solar system which helps in the supply of hot water in winters.

3.10 Panchsheel Awasiya Parisar: Faculty & Staffs Residence Complexes

The University is a fully residential campus and provides accommodation facility to all faculty members and staffs working with the University. The university has provision for five types of quarters; type 2 & 3 for support staffs and type 4, 5, & 6 for faculty members and senior administrative officials of the University. The University is looking forward to have the provision to accommodate 500 faculty members at different levels and 750 staff members in upcoming academic years. All the houses will be equipped with the facilities of power backup, hot & cold running water, intercom & internet services, fire alarm services, and block specific parks and garden.

4.0   Life at Campus

Apart from the rigorous curricular training and physical work outs, the University has constituted many clubs for the students to have a creative respite. These include clubs for Music and Dance, Dramatics, Fine Arts, Debate, and many others.

4.1 Faculty and Staff Clubs

The University is looking forward to have many support facilities to add the qualitative stay at campus. The Support facilities will be including the Transport Facilities, Health Care Centre with medical and ambulance services, Bank/ATM, Shopping Centre, Community Centre, School, Crèche, Sports Complexes, Indoor and Outdoor Stadiums, Gymnasium, Swimming Pools, Recreation Centre and Faculty Clubs etc. Some of these like Bank/ATM and Shopping centre have already been made functional.

4.2 Meditation Centre

In addition to curricular inputs the university is creating facilities to guide and shape physical, mental and spiritual growth of young minds, body and soul. Mahatma Jyotiba Phule Dhyana Kendra, inspired by stupa architecture is a learning and retreat centre to give an experience of the power of peace and inner silence. This Meditation Centre is initiated to guide and shape physical, mental and spiritual growth of our mind, body and soul. The centre is looking forward to organize seminars, lectures and experiential workshops in meditation, positive values, stress free living and self management. It will be aiming to help the residents at campus in recognizing their own inherent qualities and recollect their inner most potential. Mahatma Jyotiba Phule meditation centre facilitates the experience of the inner self through silence.

4.3 Sports Activities

The university promotes multi dimensional growth with emphasis on an integrated physical and intellectual training. Though in its formative stage, it has appointed a physical training officer and has devised special slots in daily curriculum for physical training, track and field activities, and other sports both indoor and outdoor ones. A huge sports ground with an eight lane track is shaping physical health of its inmates.

Shauryotasva: **Spirits at Display:** *Shauryotasva*, annual sports meet of the University aims at motivating students participate and add physical extensions to their intellectual quests. This annual sports meet *Shauryotasva* witnesses an excellent display of sportsman's spirits of students and faculty members.

4.4   Cultural Activities

"Culture is the widening of mind and spirits" well displayed by the students of Gautam Buddha University. The beauty of every culture is enhanced by the minds that practice it.

Abhivyanjana: **Unraveling Meanings:** *Abhivyanjana* is a birth of a new tradition. It is GBU's annual cultural event that intends to add wings to intellect, imagery, and creativity of our students. It is very essential for every civilization to preserve their heritage and celebrate it from time to time. No culture can survive in isolation hence it is imperative to make the young generation aware of this heritage. *Abhivyanjana* aims at dissolving the cultural demarcations and facilitating a new school of thought where every student thinks beyond boundaries but still grounded to his values. It also gives a platform to the budding managers and compels them to think out of the box.

4.5 Safety and Security at the Campus

The department of security and safety strives to provide safe and secure environment to all the members of the University. Though, the ultimate responsibility for personal safety rests with each individual but the department is aiming to ensure a safe environment for each individual by exercising the following activities:

- ➢ Patrolling of all University properties 24 hours a day, 365 days a year.
- ➢ Responding to and investigating all complaints.
- ➢ Responding to all emergencies and assisting at medical emergencies.
- ➢ Conducting regular checks of all residential and academic buildings for the safety and protection of the University.
- ➢ Conducting regular foot patrol of all campus buildings and residential buildings.
- ➢ Providing perimeter security (guard stations) at all entrances of the campus.
- ➢ Providing and maintaining security for all students at University campus events.
- ➢ Maintaining a working relationship with all law enforcement agencies and other emergency service agencies.