



**Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore - 641043**

Department of Resource Management

Ph.D., Resource Management

**21PHRM03B-Human factors and Ergonomics in Assistive devices
(Applicable for Ph.D. full time scholar admitted in January 2022)**

Name of the Scholar : **Christy Thomas George (21PHRMF002)**

Name of the Supervisor : **Dr. Sarasvathy.V**

No. of credits: 5

Course Objectives:

- Encourage students to understand the engineering skills and design expertise to help individuals with disabilities and older adults increase their independence and improve their quality of life
- Understand principles and complexities of assistive technology design and engineering
- Learn about the challenges and realities of people with disabilities

Unit-I Ergonomics-Significance and scope of ergonomics-person, machine and environment system interactions-anthropometry; Body dimensions; types of anthropometric data; principles of applied anthropometry in ergonomics; application of anthropometry in design; Measurement of work cost of selected household activities in terms of physiological includes like pulmonary ventilation rate, heart rate, blood pressure, energy expenditure, time and motion studies, Identification and analysis of postures and movement-effect of postures on cardiovascular and muscular skeletal system-Influence of physical and chemical agents in work environment on the efficiency of human performance-functional design and arrangement of work places for different activities-ergonomic factors in design and selection of household goods-functional designing of household furniture based on anthropometric measurement and physical, psychological, thermal, non-thermal factors-displays and controls. Analysis of human movements- functional capacity evaluation, measurement of worker effort, universal design, accommodation of disability, worker psychosocial issues

Unit-II Geriatrics-Introduction-aging as a life course process-characteristics and status of elderly-Theoretical perspective on care giving-Family support systems and their management: money, time, energy, food and health, equipments, leisure, housing environment-External facilitators/support systems-coping strategies-Bio-psycho-social and economic adjustments-contributions of the elderly-programmes and policy interventions.Geriatric assessment-functional ability, physical health, cognition and mental health, and socio environmental circumstances. Functions of Geriatric Care -elderly person's daily care routine, Understand the basic components required for the Elderly person comfort

Unit-III Assistive Technology-Introduction to Assistive Technology –definition, types, Assistive technology theories, Assistive Technology tools, Available Devices and Services AT verse Universal Design, Level of AT, Impact of Assistive Technology, the capabilities and limitations of the end users, assessment methods and techniques for technology provision, Moral and ethical considerations concerning the use of assistive technology, Geriatric and Locomotor disabled assistive devices, Safety of assistive devices, prevention and rehabilitation

Unit-IV Rehabilitation Engineering and Assistive Technology -Basics of Biomechanics, application of biomechanics for occupational safety, accident protection and release of stress, Anthropometrics, Motion Measurement & Analysis, Analysis of Stress & Strain, Clinical Motion/Gait Analysis, Locomotor Control & Rehabilitation, Wheelchair Concerns, Analysis, & Enhancements, wheelchair and seating terminology; biomechanics of sitting; assessment for seating and position management; planar, contoured, and custom seating approaches; pressure measurement and alleviation; medical implications of pressure sores

Unit-V Rehabilitation Environment- Human factors design theory ,environment theory and Psychology, Factors that support or inhibit the rehabilitation process , physical environment - the home, alternative residential environments and the community ,Conventional assistive products for the built environment, structural building components ,furniture, assistive products for sports and leisure, smart homes (including smart appliances at homes and smart toilets), barriers in and possible modifications in establishing rehabilitative environment, smart cities (smart pavements and navigation aids in public spaces)

Course Outcomes

At the end of the course the student would

- Develop knowledge, skills and application of existing technology
- To develop innovative and indigenous technologies to enhance the quality of life and inclusion of persons with disabilities and senior citizens at national and global levels.
- Build knowledge on Assistive devices and assistive technologies
- Understand Accessible designing in construction, universal accessibility standards

Text Books:

1. Phillips, C.A. (2000), Human Factors Engineering, John Wiley and Sons, Inc., New York.
2. Nickell.P and Dorsey,J.M.(2002), Management in Family Living, CBS Publishers, New Delhi
3. Khan,M.I(2010), Industrial Ergonomics, New Delhi: PHI Learning Pvt Ltd.
4. ILO,(2001), Introduction to work study, Oxford & IBH publishing Co. Ltd., New Delhi.
5. Bridger, RS (2003), Introduction to Ergonomics, 2nd Edition, Taylor &Francis,
6. Singh, S (Edt), (2007), Ergonomics Interventions for Health and Productivity, Himanshu Publications, Udaipur, New Delhi.

Reference books:

1. Oishi, MeekoMitsuko K, Design and use of Assistive Technology, Dordrecht: Springer, 2010.
2. Cook A.M. and Hussey S.M., Assistive Technologies: Principles and Practice, Mosby, USA, 2008
3. Christine M. Cress, Peter J. Collier, Vicki L. Reitenauer and Associates, Learning Through Serving – A Student Guidebook for Service-Learning Across the Disciplines, Sterling, Virginia, 2005.
4. Oishi M.M.K., Mitchell I.M., Machiel Van der Loos H. F., (ed), Design and use of assistive technology: social, technical, ethical, and economic challenges. New York: Springer, 2010.
5. Abdelsalam (Sumi) Helal, MounirMokhtari, BessamAbdulrazak (ed), The engineering handbook of smart technology for aging, disability, and independence. Hoboken, N.J.: Wiley,c2008
6. Arthur D. Fisk [et al.]. Designing for older adults: principles and creative human factors approaches. Boca Raton: CRC Press,c2004



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Name of the Scholar: R.Rayshme (21PHRMF002)

Name of the Supervisor: Dr.K.Manimozhi

**21PHRM03C- Assessing the Impact of Entrepreneurship Programme on Women
(For Ph.D., Full-Time Scholar Admitted in January 2022)**

Course Objectives: to

No of Credits: 5

1. Assess the status of women in India and observing the need for women empowerment.
2. Understand the concept of entrepreneur and entrepreneurship
3. Impart selective entrepreneurial skills and understanding to run a business efficiently and effectively

UNIT 1 - Need for Women Empowerment

Status of Women in India- Gender, Health, Literacy and Education, Economy, Politics, Socio-Cultural, Media Employment, Environment, Decision Making and Social Obstacles in Women Empowerment. Ensure Holistic Development of the Society, determine their Intelligence level, Capable Enough to Solve the Issues of Unemployment, Success Factors for Empowering Women, Economic Empowerment and Political Empowerment, Elimination of Gender Discrimination, Changes in Women's Attitude.

UNIT 2 - Concept of Entrepreneur and Entrepreneurship

Entrepreneur- Entrepreneurs an emerging Class. Meaning Importance and Concept of Entrepreneur, Characteristics and Qualities of an Entrepreneur, Function of Entrepreneur, Types of Entrepreneurs, Major Motives Influencing an entrepreneur.

Entrepreneurship- Meaning, Importance, Types and Characteristics of Entrepreneurship, Reasons for Entrepreneurship, Factors Influencing Entrepreneurship Growth- Psychological, Social, Economic and Environmental. Micro, Small, Medium Enterprises. Difference between Entrepreneur and Intrapreneur, Entrepreneurship in Economic Growth, Factors Affecting Entrepreneurial Growth. Stages in entrepreneurial process.

UNIT 3 - Women Entrepreneurship

Understanding women entrepreneurship, Role of Women Entrepreneur in Economic Development, Concept of women Entrepreneur, Categories of Women Entrepreneurs, Factors Influencing Women Entrepreneurs, Problems faced by Women Entrepreneurs in India, Overcoming the Challenges Faced by Women Entrepreneurs.

UNIT 4 - Entrepreneurship training programme and project planning and formulation

Need and Objective of EDP Process, Steps in EDP Programme, Evaluation of EDP Programme, EDP Programme in India. Strategic Planning- The Importance of Planning, Business Analysis, Business Goals, Objectives, Strategies and Budgeting. Project-Meaning and Types, Project Identification- Objectives Characteristics and Classification. Project Planning Elements- Feasibility Analysis, Techno-Economic, Project Design and Network Analysis, Input Analysis, Financial Analysis, Industry Analysis, Competitor Analysis and Cost Benefits. Fundamentals of Marketing- Branding, Target Marketing, Marketing Analysis,

Steps in preparing Marketing Plan. Legal aspects, regulatory aspects of SMEs and Launching Formalities.

UNIT 5 –Establishing the enterprise and e-entrepreneurship

Business proposal writing, Steps or guidelines in the preparation of a business report, Procedure to avail loan at banks and funding agencies, Legal and policy issues and Agencies supporting for Entrepreneurs, Utilizing Digital and Social Media, FREE Ecommerce (Online) Business, E-product launch Online marketing and online business.

REFERENCES:

1. Beriso, B. S. (2021). Determinants of Economic Achievement for Women Entrepreneurs in Ethiopia. *Journal of Innovation and Entrepreneurship*, Sage Publications.
2. Fauzi&Suwarni (2021). Mapping Potential Sectors Based on Financial and Digital Literacy of Women Entrepreneurs: A Study of The Developing Economy. *Journal Of Governance and Regulation*, VirtusInterpress.
3. Khanet.al., (2021). Factors Affecting Women Entrepreneurs' Success: A Study of Small- And Medium-Sized Enterprises in Emerging Market of Pakistan. *Journal of Innovation and Entrepreneurship*, Sage Publications.
4. Panda. S. (2018). Constraints Faced by Women Entrepreneurs in Developing Countries: Review and Ranking. *Gender In Management: An International Journal*, Elsevier.
5. Rosca. E.,&Brem. A. (2020). Women Entrepreneurs as Agents of Change: A Comparative Analysis of Social Entrepreneurship Processes in Emerging Markets. *Technological Forecasting and Social Change*.
6. Eric&Reis (2017) *The Start-Up Way: How Entrepreneurial Management Transforms Culture and Drives Growth*
7. Amjadet.al., (2020). Entrepreneurship Development and Pedagogical Gaps in Entrepreneurial Marketing Education. *The International Journal of Management Education*, Inder Science Publishers.
8. Liet.al., (2020). Role of Business Incubators as a Tool for Entrepreneurship Development: The Mediating and Moderating Role of Business Start-Up and Government Regulations.
9. Siagianet.al., (2022). Students Perception in Entrepreneurship Development at UniversitasNegeri Medan. *Entrepreneurship Development Institute of India*, Pp.53-85,96-98.
10. Podili, R. (2022). Women Leadership in Entrepreneurship Development. *Entrepreneurship Development Institute of India*. Pp. 7-57,78-94.



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Name of the Scholar : Shobha. S (21PHRMP001)

Name of the Supervisor: Dr. D.Sumathi

**21PHRM03D-Empowering Women through Agro Enterprises
(Applicable for Ph.D., Part-Time scholar admitted in January 2022)**

Course Objectives: Enable Scholar to:

No of Credits: 5

1. Enhance the economic development of rural women.
2. Understand the concept of Agro enterprises and entrepreneurship
3. Improve nutritional standards for betterment of health.
4. Generate employment in order to prevent unemployment problem.
5. Know the women entrepreneurship development in India.

Unit 1: Empowerment of Women

Empowerment of Women: Alternative approaches - Women in Development (WID) , Women's Development- Definition, Meaning and Scope, Gender and Development (GAD) Human Development Index (HDI) versus Gender Development Index (GDI), Types of Empowerment: Social, Educational, Political, Economical, Strategies for women empowerment, Legal to Holistic levels-Role of Government, and NGOs - Help line numbers in promoting women's empowerment - National and International Funding Agencies in promoting research on women, Constitutional procession for women in Indian constitution.

Unit 2: Entrepreneurship Development

Concept and overview of entrepreneurship-definition, nature and characteristics, need and importance, benefits of being an entrepreneur, types of entrepreneurs, entrepreneur and entrepreneurship, entrepreneur vs. manager, entrepreneurs vs. entrepreneurs; evolution and growth of entrepreneurship in India, factors affecting growth of entrepreneurship in India, Indian society and entrepreneurship development; role of entrepreneurship in economic development.

Unit 3: Women Entrepreneurship

Women Entrepreneurship:- Types of Entrepreneurs, Opportunities and Risk, Push, and Pull Factors, financial Assistance and credit facilities, Micro finance, Entrepreneurship Skill and Competencies - Women Entrepreneurship Development in India, Rural Entrepreneurship Development Programme – Gramina Bank, Mahila bank and supportive measures, Industrial Development Bank of India (IDBI) , Small Industries Development Bank of India, SHG and Entrepreneurship opportunities.

Unit 4: Introduction to Agro Enterprises

Introduction to enterprise, Setting up a new enterprise, Enterprise skills, Enterprise opportunities, risk, legal obligations and ethical considerations, Negotiation, Finance, Business planning, markets and customers, Help and support for enterprise, Communication, Types of Agro Enterprises, Agro Insurance, Benefits, Agro Exports, Input and best practices, Agro credit, Women and Agriculture.

Unit 5: Agro Marketing and Agro Productivity

Agro marketing and market efficiency, Marketing functions and costs, Market structure and imperfections, regulated markets, marketed and marketable surplus, Crop insurance, Terms of trade between agricultural and non-agricultural prices, Objectives of agricultural policy, Food security in India and Public Distribution System.

Agro Productivity- Livestock resources and their productivity, White revolution, Fishery and poultry development, Forestry, horticulture and floriculture, Bee keeping, Mushroom production, Kitchen garden, Vermicomposting, Issues and problems in rural industrialization and development of agro-based industries.

Text Books:

- Anil Kumar Jha, (2012), "Gender Inequality and Women Empowerment", Axis Books, New Delhi.
- Cheremisinoff N.(2003), Handbook of solid waste management and waste minimization technologies, Amsterdam: Butterworth-Heinemann.
- D. Hoornweg, P. Bhada-Tata (2012), What a Waste: A Global Review of Solid Waste Management. The World Bank, Urban Development & Local Government Unit, Washington, USA.
- Elson Diane, etal. (2019), "Gender Equality and Inclusive Growth: Economic Policies to Achieve Sustainable Development", UN Women.
- Jenny Edwards, Andrea Cornwall etal. (2014), "Feminisms, Empowerment and Development: Changing Women's Lives", Kindle Edition.

Reference books:

- Jennifer. R. Bartley, (2015), "Designing the New kitchen Garden" an American Potages Handbook.
- J.P Sharma, S.K Dubey, R. Roy Barman and Nisha Sharma, (2011), "Agro-Enterprises for Rural Development and Livelihood Security", New India Publishing agency.
- Jacques and David, (2017), Gardens of Court and Country: English Design 1630-1730, p. 62, Yale University Press, ISBN 9780300222012.
- Mukerji, Chandra, (1997), Territorial ambitions and the gardens of Versailles, pp. 64-65, Cambridge University Press, ISBN 9780521599597, 0521599598, Google books.
- Nandal Santosh, (2012), "Women and Development", A Mittal Publications, New Delhi.
- Priyanka Sharma Gurnani, (2016), "Women Entrepreneurship – Emerging Dimension of Entrepreneurship in India" Edu Creation Publishing House, New Delhi.
- Ramesh V., (2016), Entrepreneurship as a Business Model "A Review on Indian Innovations and Practices in Waste Management" International Journal of Advances in Agricultural & Environmental Engg. (IJAAEE) Vol. 3, Issue 1 (2016) ISSN 23491523 EISSN 2349-1531.
- Rani Sandhya, (2012), "Development of Women – Issues and Challenges", Discover Publishing House Pvt Ltd, New Delhi.
- Rajeev Roy, (2011), Entrepreneurship, Oxford Higher Education, 2nd edition.
- Rao Pulla, (2012), "Political Empowerment of Women in India – Challenges and Strategies", ABD Publishers, New Delhi.
- Robert D Hisrich, M P Peters, D A Shepherd, (2017), Entrepreneurship, McGraw Hill, 10th edition.

- Richard bird, (2012), “The Kitchen Garden Book: The Complete practical guide to kitchen gardening from planning and planting to Harvesting and Storing”, South water publishing.
- Thelma Akongo, (2011), Agro Enterprise Development and Gender Equity, Lambert Academic Publishing.
- T. Ratha Krishnan, S. R. Padma, (2013), “Agro Enterprises for, Empowering Farm Women”, Scientific Publishers (INDIA).

