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| --- | --- |
| **Title** | Monitoraggio energetico / pianificazione / abilità e tecniche di gestione e EE KTF |
| **Duration (in weeks)** | 2 |
| **Starting / ending week** | 21 / 22 |
| **Key Concepts and Issues** | Performance energetica, gestione dell’energia, pianificazione energetica, monitoraggio energetico, programmi per il trasferimento delle conoscenze (KTF) |
| **Intended Purpose** | * Fornire uno schema delle competenze necessarie per la manipolazione, l’interpretazione e il monitoraggio di dati sui consumi di energia. * Fornire un quadro dei programmi di KTF nel contest degli EnMS |
| **Learning Outcomes** | I discenti sapranno:   * Valutare le caratteristiche della performance energetica di uno specifico edificio * Progettare un KTF per l’efficienza energetica * Usare dati per capire meglio i consumi e prendere decisioni sul risparmio energetico * Monitorare e misurare consumi e risparmi di energia. |
| **Basic Learning Material** | **Presentazione**  [Skills & Techniques](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.010%5D+O5_EnMS_CourseIV_Module3_Topic2.pptx) in formato online  **Documenti**   * [An Advanced Energy Management Framework to Promote Energy Awareness, Vikhorev , Greenough & Brown (2012) Institute of Energy and Sustainable Development, De Montfort University, Leicester](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.007%5D+Vikhorev12Advanced.pdf) * [A Four-Step Path to a Comprehensive Energy Management Action Plan by Keith Stager and Cassie Quaintance, Schneider Electric North American Operating Division](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.008%5D+energy-management-guide.pdf) * [Making the Most of Your Company’s Knowledge: A Strategic Framework Georg von Krogh, Ikujiro Nonaka, Manfred Aben (2001)](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.009%5D+Making-the-most-of-our-companys-knowledge.Strategic-framework-2001.pdf) |
| **Additional Learning Material** | **Documenti**   * [Success factors of energy management in energy-intensive industries: Development priority of energy performance measurement, International Journal of Energy Research Volume 37, Issue 8, pages 936–951, 25 June 2013](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.011%5D+2013+-+Success+factors+of+energy+management+in+energyintensive+industrie....pdf) * [Scenario modelling: A holistic environmental and energy management method for building operation optimization. O'Donnell, James T.; Keane, Marcus; Bazjanac, Vladimir; et al. (2013)](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.012%5D+Scenario-Modelling_2012_EB_ForDistribution+done.pdf) * [Automated energy monitoring of machine tools, Vijayaraghavan & Dornfeld Laboratory for Manufacturing and Sustainability, UC Berkeley (2010)](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.013%5D+eScholarship+UC+item+3j5411bd.pdf) * [Thinking Globally: How ISO 50001 - Energy Management can make industrial energy efficiency standard practice, McKane, Aimee (2010)](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.014%5D+eScholarship+UC+item+92d8q553.pdf) * [A framework for evaluating economics of knowledge management systems, Minsoo Shin (2004)](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.015%5D+19)17.pdf) * [Working Knowledge: How Organizations Manage What They Know, Thomas H. Davenport and Lawrence Prusak](https://www.dropbox.com/home/EPOQUE%20project/epoque_o5/Course%20IV/Module%203?preview=%5B4.3.016%5D+T1-Chapter1.pdf) |
| **Educational video** | * [Energy Management Foundation Training - Module 14](https://www.youtube.com/watch?v=UiDzZout2Lk) * [Guideline for EnMS Charter](https://www.youtube.com/watch?v=xGpLyt2yXDg) * [Energy Management Foundation Training - Module 20](https://www.youtube.com/watch?v=MwsbSJ7Qfm4) |
| **Reading materials** |  |
| **Activities** | Si chiederà agli studenti di scrivere un progetto per la realizzazione di un EnMS indirizzato ai quadri dirigenziali di una organizzazione. Il progetto dovrà eveidanziare tutti i benefici e le opportunità offerte dallo EnMS. |
| **Checklist** | Alla fine di questo modulo, i discenti sapranno:   * Progettare e gestire un piano di misurazioni energetiche * Progettare e gestire un piano di gestione dell’ energia * Progettare e gestire un piano di audit interno * Scrivere una politica energetica e tutti gli altri documenti necessari per la cetificazione ISO 50001 * Progettare un KTF per l’efficienza energetica |
| **Evaluation** | Valutazione dell’esercitazione |