| **Resource Name** | **Link** |
| --- | --- |
| ***External SE links .*** | |
| Defense Acquisition University (DAU) | <https://www.dau.mil/> |
| INCOSE (International Council on Sys Eng) site (check their working groups and recorded seminars) | <http://www.incose.org/>  membership required for most (but not all), the good stuff |
| [MITRE](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjJn8zNns7jAhVhqFQKHdBDAKMQFjAAegQICBAC&url=https%3A%2F%2Fwww.mitre.org%2F&usg=AOvVaw1JXAF7Gq-Nitxy5GwZFr01) Corp SE guide | <http://www.mitre.org/work/systems_engineering/guide/enterprise_engineering/> |
| Interesting additional source of SE background | <http://www.acqnotes.com/acqnote/careerfields/systems-engineering-overview> |
| NASA SE Handbook 2017 | <https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20170001761.pdf> |
| Nat’l Defense Ind. Association (NDIA); there are many *committee*s within NDIA *Divisions*, as well as Industrial Working Groups (WG) | <http://www.ndia.org/Pages/Default.aspx> |
| OMG MBSE Wiki. Check out the Reference Links on right-hand side of page (sort of dated now, but still) | <http://www.omgwiki.org/MBSE/doku.php?id=mbse:enterprise> (especially note COMPASS and DANSE links on that page) |
| Institute of electronics & electrical engineering (and *societies* within) | <http://www.ieee.org/index.html> (standards for S/W reviews) |
| Lean for SE. where **lean** comes from | <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjSyceCoovcAhU4HzQIHd4ICIIQFggrMAA&url=https%3A%2F%2Fwww.malotaux.eu%2Fdoc.php%3Fid%3D79&usg=AOvVaw1ypUuviVQtna06VKbWYEI-> |
| One page architecture descriptions: A3 method | <http://doc.utwente.nl/75284/> |
| Overlap of PMP and SE (not perfect, but close to the truth); there is an INCOSE WG coordinating with PMI… | <https://www.pmi.org/learning/library/systems-engineering-project-5857>  <https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.2334-5837.2007.tb02973.x> |
| Gentry Lee, Chief Systems Eng of JPL; 2 one hour videos: “When The Canvas Is Blank,” and “Top 10 Behaviors Of A Systems Engineer” | <http://spacese.spacegrant.org/index.php?page=videos>  **(highly recommended!)** |
| Wonderful, short, readable Intro to Systems Engineering! Also highly recommended! | <http://dwaynephillips.net/systemsengineering/JustEnoughSystemsEngineering.pdf> There’s a link to his website in the book. Click it! |
| Office of Deputy Assistant Secretary of Defense (ODASD) Systems Engineering *System of Systems* Engineering Collaborators Information Exchange (SoSECIE) (historical chart decks collected) | <http://www.acq.osd.mil/se/outreach/sosecollab.html> |
| DoD 4245.7-M Transition From Development To Production – (the *Willoughby* Templates) | <http://everyspec.com/DoD/DoD-PUBLICATIONS/DoD_4245--7-M_3692/> |
| INCOSE SoS WG 2018 webinar recordings (avail: members only) | https://connect.incose.org/Library/Webinars/Pages/INCOSE-Webinars.aspx |
| Applying Human Factors and Usability Engineering to Medical Devices | <https://www.fda.gov/media/80481/download> |
| FDA discusses benefits versus, and communicating risks (mostly medical devices, but applies lots of areas) | <https://www.fda.gov/media/98657/download>  <https://www.fda.gov/media/81597/download> |
| Adm Rickover on Practical Engineering, and Engineering Management (Own your job like you’ll be there forever!) | <http://ecolo.org/documents/documents_in_english/Rickover.pdf>  <https://en.wikiquote.org/wiki/Hyman_G._Rickover>  <http://govleaders.org/rickover.htm> |
| MITRE Open Courseware – SoS Engineering MOOSE | https://mitre.tahoe.appsembler.com/ |
| MIT Open Courseware Introduction to Systems Engineering (selected video lectures on U-tube) Prof Olivier de Weck! | <https://ocw.mit.edu/courses/aeronautics-and-astronautics/16-842-fundamentals-of-systems-engineering-fall-2015/> (whole course videos)  <https://www.youtube.com/watch?v=CTVFDb44ses> (Model Lang) |
| ***Recommended Reading .*** | |
| *A Mind of Its Own: How your Brain Distorts and Deceives (paperback)* Cordelia Fine. | <http://www.amazon.com/gp/product/0393331636/ref=pd_lpo_k2_dp_sr_1?pf_rd_p=486539851&pf_rd_s=lpo-top-stripe-1&pf_rd_t=201&pf_rd_i=0393062139&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=1ZS7JXVN5NFH1PWEXH2P> |
| Double Loop Learning (Chris Argyris) | <http://www.infed.org/thinkers/argyris.htm> |
| Ladder of Inference (Chris Argyris) | <http://www.boblarcher.com/LadderofInference.pdf> |
| Craig Weber Consulting (special topics and Conversational Capacity) | <http://weberconsultinggroup.net/craig-weber/> |
| Mythical man month: Essays on Software Engineering Frederick P. Brooks | <http://www.amazon.com/dp/B000OZ0N6M/?tag=googhydr-20&hvadid=33848767675&hvpos=1t1&hvexid=&hvnetw=g&hvrand=13386844767561402926&hvpone=&hvptwo=&hvqmt=b&hvdev=c&ref=pd_sl_7e00jlc842_b> |
| ***Quotes for Your Consideration .*** | |
| "Scientists investigate that which already is; engineers create that which has never been."  -- Albert Einstein | "Design is a funny word. Some people think design means how it looks. But of course, if you dig deeper, it's really how it works. The design of the Mac wasn't what it looked like, although that was part of it. Primarily, it was *how it worked*. To design something really well, you have to “get it.” It takes a passionate commitment to really thoroughly understand something, chew it up, not just quickly swallow it. Most people don't take the time to do that." -- Steve Jobs |
| ***Internet sources .*** | |
| Titanic (and Britannic and Olympic) engineering feats - background for the next one... | <https://www.youtube.com/watch?v=fHmgF4ibmuk> |
| Titanic **project management** failures/ lessons learned.  **Highly recommended!** It goes quick, you might need to back up a few times to catch all the *text* (no- narration) | <https://www.youtube.com/watch?v=wbvfir2x344> |
| Discussion of recent Japanese Quality failures, probably due to *organizational* problems of TQM. WSJ 5 Feb 2018 | <https://www.wsj.com/articles/companies-everywhere-copied-japanese-manufacturing-now-the-model-is-cracking-1517771142?mod=e2tw> |
| Complexity metric  <https://www.youtube.com/watch?v=jvQkmR1XcyY> | Even if you do not care a bit about complexity, the first 22 minutes of this are REALLY fun: it is an MIT SDM webinar by Oliver de Weck about “Measure of Complexity of Systems” - interesting intro to the subject with the Wright Brothers, up to how to measure complexity at about 23 min in.   Compl Measure combines interfaces, design structure matrix (DSM), and graph energy of the DSM. The (Elaine) *Weyuker number* is a measure of complexity that can be used on many cyberphysical systems, although she developed it for software architectures’ complexity, and it's been used by chemists in quantum descriptions of organic molecules  (Math – you can never know enough!) |
| <https://www.youtube.com/watch?v=4a4ZxOAQifE> | **Why projects fail.** IT projects, but it applies in general, too. ‘hand on the whiteboard’ style Key takeaways: projects fail for lack of *momentum*…  - momentum = widespread project *understanding* (mass) x where you’re going with the project (*velocity*)  - Rqmts = big part of understanding  - *Everyone has more experience with what is not good; so if/when we finally see the* right *stuff, we don’t recognize it anyway!*  Key skills: Facilitating…seeing a forest for the trees …………..making sense of chaos  Massive, chaotic *info overload* at start of major project makes understanding difficult… |
| Spurious correlations for you big data types | <http://tylervigen.com/spurious-correlations> |
| Dilbert; why projects fail | <https://www.youtube.com/watch?v=huEpQj5FcGI> |
| The 7 Deadly Sins Of Product Development (LinkedIn – Dilbert refs.) | <https://www.linkedin.com/pulse/7-deadly-sins-product-development-travis-m-jacobs/?trackingId=KbQL%2BnDOTlrBQzC2P%2FtDhw%3D%3D&lipi=urn%3Ali%3Apage%3Ad_flagship3_feed%3BN2J%2Bx2B4RuyK0GkRC9%2BByw%3D%3D&licu=urn%3Ali%3Acontrol%3Ad_flagship3_feed-object> |
| Scope creep – Bradley FV | <https://www.youtube.com/watch?v=AHSjpFUKQR4> |
| The Expert | <https://www.youtube.com/watch?v=BKorP55Aqvg> |
| Leadership speech? Just fun. Almost too self-deprecating, but you like this guy anyway. Can we learn what is he doing right? | <https://www.youtube.com/watch?v=SA7bKo4HRTg> |
| The Divided Brain; balance is the key! | <https://www.youtube.com/watch?v=dFs9WO2B8uI> |
| Steve Jobs Quote | <http://www.youtube.com/watch?v=UvEiSa6_EPA> |
| Taxonomies vs. Ontologies | <https://www.sla.org/wp-content/uploads/2013/06/SelectingTool_Pohs.pdf> |
| Secrets of persuasion | <https://www.youtube.com/watch?v=cFdCzN7RYbw&nohtml5=False> |
| Decision Driven Dashboards – don’t just report status, report what decision it tells you to make | <https://www.linkedin.com/pulse/strategic-vs-operational-dashboards-john-fitch?trk=hb_ntf_MEGAPHONE_ARTICLE_POST> |
| Systems Thinking | <http://www.iseesystems.com/Online_training/course/index.htm> |
| *Robustness* discussions | <http://www.networkworld.com/article/3113660/data-center/were-learning-the-wrong-lessons-from-airline-it-outages.html>  **robust** systems *do not* fail from any single cause |
| ***Things you should know about*** | |
| <http://acqnotes.com/acqnote/tasks/joint-capability-area-attributes-acqnotes> | Joint Capability Areas – Taxonomy of how US DoD characterizes its capabilities |
| <https://www.jcs.mil/Doctrine/Joint-Training/UJTL/> | Unified Joint Task List (UJTL) – how DoD organizes the tasks the military must do (there are also derivative Service Task Lists, more specialized) |
| <http://acqnotes.com/acqn> ote/tasks/joint-service-specification-guides | Joint Service Specification Guides (JSSGs) – shows how a spec should be written, organized, and why, with explained examples, for numerous types of systems/subsystems |
|  | Professional organizations: INCOSE, ISSS (Sys Eng & Sys Sci), SOLE (Logistics), SAVE (Value Eng), APIC (Supply chain) |